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THE IMPACT OF WEIGHT-RELATED TEASING ON  
BINGE EATING AND MOOD

by

Cheryl D. Aubie

A Doctoral Dissertation  
Submitted to the Faculty of Graduate Studies and Research  
through the Department of Psychology  
in Partial Fulfilment of the Requirements for the  
Degree of Doctor of Philosophy at the  
University of Windsor

Windsor, Ontario, Canada

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## ABSTRACT

Weight-related teasing has been thought to induce both negative mood and binge eating (Neumark-Sztainer et al., 2002). Two consecutive studies were designed to experimentally investigate the impact of weight-related teasing on mood and eating behaviour. Participants were female university students, some of whom reported binge eating at least once per week, while others reported no binge eating behaviour at all. In order to mask the true purpose of the study, participants were invited to participate in a study examining the impact of memory on taste perception. In Study 1, 26 binge eaters and 62 non-binge eaters were randomly assigned to read a vignette that involved either a female who was teased about her weight, or a similar, vignette that contained no teasing content. After reading the vignette, participants completed various measures including a measure of negative affect. Participants also completed a taste test which involved sampling three types of small, homemade cookies. Participants were told to sample as many cookies as needed to complete their taste ratings. The results showed that participants who were exposed to the weight-related teasing vignette, regardless of binge status, reported feeling more negative affect than those who read the neutral vignette. Further, binge eaters who read the weight-related teasing vignette ate significantly more cookies than participants in all other groups. Thus, weight-related teasing induced negative affect, but negative affect translated into increased eating only for those who reported binge eating at least once a week. Study 2 was designed to further explore the specific impact of weight-related teasing on eating and mood in binge eaters and a comparison group. It could not be determined from the results of Study 1 whether the

impact of teasing that was upsetting to binge eaters was specifically due to the weight-related content. Thus, Study 2 expanded upon these findings with the addition of a third vignette, one describing teasing about academic performance. Study 2 used a similar methodology to expand and replicate the findings of Study 1, with three types of chocolate candies replacing cookies as the foods presented in the taste test. The results of Study 2 showed that participants who were exposed to either teasing vignette reported feeling more negative affect than those who read the neutral vignette. With respect to eating behaviour, binge eaters ate significantly more candies in the weight-related teasing condition as compared to those in all other conditions. While all participants experienced higher levels of negative affect after reading about teasing, binge eaters who read about weight-related teasing ate more candies than all other groups. These results suggest that, for binge eaters, exposure to weight-related teasing has an impact on eating above and beyond exposure to other types of teasing. The present research suggested that the relationship between weight-related teasing and binge eating may not be simply mediated through negative affect, as was originally suggested. Alternatively, the role of personal characteristics such as sensitivity to social rejection, the importance of shape and weight to self-worth, and motivation to escape aversive self-awareness are explored in relation to the specific impact of weight-related teasing on binge eating.

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## Introduction

It is not uncommon for people to have difficulties controlling the urge to overeat. Disturbances in human eating behaviour have been described for centuries. Uncontrollable hunger and binge eating were first described by ancient Greek and Roman physicians centuries ago (Kinoy, 1994) and with the phenomenon of binge eating receiving a great deal of attention in since the 1950's (Stunkard, 1959). Today, in Western cultures, a significant portion of the population reports experiencing a daily struggle to restrict and control their food intake. Dieting and limiting caloric intake has nearly become a cultural norm in North America. The struggle to lose weight is often accompanied by food cravings and the urge to overeat (Polivy, Heatherton, & Herman, 1988). However, in the more severe of these cases, the urge to overeat seems almost overwhelming and impossible to control. Under these circumstances, overeating may actually be a symptom of an eating disorder (Fairburn & Wilson, 1993).

### *Definition of Binge Eating*

Binge eating is commonly thought of as consuming a large amount of food in a specified amount of time. The notion of binge eating is one that is not restricted to the field of clinical psychology and research. However, the lay understanding of the term “binge eating” may be a contributing factor to the confusion about its definition. In both clinical psychology and research, a binge is defined by a two-part criterion. The first part of the criterion outlined in the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV; APA, 1994) defines binge eating as the consumption of an

amount of food that is definitely larger than most people would eat within a similar time frame, under similar circumstances. In addition to this requirement, the binge episode must be accompanied by a sense of lack of control over eating. That is, the individual must feel that they cannot control what or how much they are eating.

The requirement that a binge episode involves eating a large amount of food is consistent with both laboratory findings and self-reported caloric intake during binges in patients with bulimia nervosa (Walsh & Garner, 1997). Nevertheless, some researchers have challenged this definitional requirement, suggesting that the amount of food consumed during a binge is not the defining feature of the binge. Studies have shown that approximately one third of patients, who otherwise satisfy the criteria for bulimia nervosa, reported consuming a relatively small number of calories during a binge (Fairburn & Wilson, 1993). It is possible that what constitutes a binge is subjective, and determined by factors other than caloric content. For example, in individuals with eating disorders, the mere consumption of a food deemed “forbidden” may be subjectively labeled as a binge episode, even if this forbidden food is not consumed in large amounts (Rosen, Leitenberg, Fisher, & Khazam, 1986). Currently, there are no data showing fundamental differences in binges, or their association with comorbid psychopathology, as a function of the quantity of food consumed (Fairburn & Wilson, 1993). Because of the lack of consensus on this issue, research studies differ somewhat in their definition of binges, with some accepting the Eating Disorder Examination’s (Fairburn & Cooper, 1993) definition of subjective overeating (amount of food eaten is not “large” but viewed by subject as excessive) with others remaining true to the DSM-IV definition of a binge episode.



The second part of the DSM-IV (APA, 2000) binge criterion is a subjective sense of lack of control over eating. This criterion was introduced to address some of the concerns about the content validity of the concept of binge eating (Devlin, Goldfein, & Dobrow, 2003). More specifically, it has been questioned whether the symptom of binge eating itself adequately distinguishes those with truly disordered eating from the larger group of individuals who periodically engage in overeating. In order to increase diagnostic specificity, the DSM-IV Work Group included loss of control in the diagnostic criteria for binge episodes, both in the context of bulimia nervosa (BN) and binge eating disorder (BED; Devlin et al., 2003). Using both the regularly occurring consumption of large amounts of food and the loss of control during a binge episode substantially reduces the number of individuals who meet the criteria for binge eating episodes, contrasting these individuals from occasional overeaters (Devlin et al., 2003).

### *Binge Eating and the Classification of Eating Disorders*

Eating disorders are complex psychiatric and medical conditions where individuals suffer from persistent disturbances in their eating (APA, 2000). Eating disorders are found predominantly among young women in Western countries, with anorexia nervosa (AN) and bulimia nervosa (BN) being the most well-defined eating disorders (Kinoy, 2002). In a large sample of Canadians, the lifetime prevalence of AN was found to be 0.56% for females and 0.16% for males; the lifetime prevalence of BN was found to be 1.1% for females and 0.1% for males (Garfinkel, Lin, & Goering, 1995). In addition to the full syndrome of eating disorders, one in four adolescent females in Ontario reports engaging in at least one symptom of an eating disorder (McVey, et al.,

2005). Eating disorder are associated with both psychiatric and medical complications (Garfinkel et al., 1995), and can have a devastating impact on the emotional, social and physical lives of sufferers and their families.

Currently, binge eating can be a symptom of each of the eating disorders included in the DSM-IV. It is the central characteristic of bulimia nervosa and binge eating disorder. Further, in the most recent versions of the DSM, binge eating has also been included as part of a subtype of anorexia nervosa, reflecting the most current research findings about this disorder (APA, 1994).

Binge eating is a prevalent problem among females and is not confined to any one eating disorder (APA, 2000). Prevalence rates vary considerably among different populations. Weekly binge eating episodes have been reported in 1.5%-10% of female college students and approximately 1.1% of college aged males (Fairburn & Wilson, 1993; Katzman, Wolchik, & Braver, 1984). Prevalence rates of binge eating for those enrolled in weight loss programs is markedly higher, with rates of 18%-35% being reported (Ramacciotti et al., 2000).

The fact that binge eating is currently included as a diagnostic criterion in all eating disorders, and its prevalence is significantly high among young women, enhances the need for a better understanding of this behaviour.

In the first published paper describing the syndrome of BN, Russell (1979) indicated that episodes of overeating constituted the key feature of this eating disorder. Following this emphasis on overeating or binge eating, as the central feature of BN, each successive edition of the DSM has included binge eating as the salient behavioural

characteristic of this disorder (Wilson, 1993). Binge eating episodes in those diagnosed with bulimia nervosa are typically followed by recurrent, inappropriate compensatory behaviour aimed at preventing weight gain. Typically these compensatory behaviours include self-induced vomiting, the misuse of laxatives/diuretics, fasting, and/or excessive exercise (APA, 1994).

However, Stunkard's (1959) early clinical descriptions of binge eating suggested that a distinct subgroup of obese individuals who engaged in patterns of binge eating did not engage in compensatory behaviours to prevent weight gain. The phenomenon of binge eating in the absence of inappropriate compensatory behaviours has been the focus of a great deal of research in the past decade. For the first time, the fourth edition of the DSM (APA, 1994) acknowledged this subset of binge eaters who do not use compensatory measures and included BED as both a criteria set requiring further study, and a specific example of eating disorder not otherwise specified (EDNOS). The inclusion of this provisional diagnosis in the DSM-IV has resulted in a dramatic increase in scientific interest in binge eating behaviour (Striegel-Moore & Franko, 2003).

#### *Characteristics Associated with Binge Eating*

Regardless of the disorder under which an individual's binge eating is categorized, those who engage in binge eating are more likely (than nonbinge eaters) to exhibit body image dissatisfaction and other associated psychopathology (Mitchell & Mussell, 1995). More specifically, individuals who engage in binge eating also tend to have elevated rates of comorbid Axis I psychopathology compared to controls. The rate of comorbid affective disorders, particularly major depressive disorder, is much higher in binge eaters,

compared to nonbinge eating groups (49% vs. 28%, respectively)(Telch & Stice, 1998).

Research has also demonstrated that binge eating severity correlates with the severity of psychiatric symptomatology (Mitchell & Mussell, 1995). For example, the larger the amount of food, and the more the individual experiences lack of control over their eating during a binge, the more severe the individual's associated psychiatric symptoms. Comorbidity studies of binge eating and Axis II disorders have identified higher rates of Axis II disorders in binge eaters than in nonbinge eating controls. Significant group differences have been found for both avoidant personality disorder (9% vs. 0%) and borderline personality disorder (16% vs. 1%) (Yanovski, Nelson, Dubbert, & Spitzer, 1993). This associated psychopathology has also been used to differentiate between binge eaters and their nonbinge eating, obese counterparts. More specifically, obese nonbinge eaters have been found to have a lesser degree of psychopathology (Yanovski, 2003).

In addition to the increased likelihood of having a comorbid psychological disorder, those who engage in binge eating without the use of inappropriate compensatory weight loss methods are also at a much-increased risk of obesity. Binge eating disorder is highly associated with weight gain and obesity, as evidenced by findings from clinic, community and population-based studies, with more than 30% of binge eaters falling into the obese weight range (Fairburn & Brownell, 2002; Mitchell & Mussell, 1995).

### *Etiology of Binge Eating*

The etiology of binge eating has received a great deal of attention and speculation. However, there is still little consensus about what causes binge eating. Several etiological

theories have been proposed. Determining the etiology of binge eating is difficult not only because of the lack of agreement among clinicians and researchers, but also because of the likelihood that the etiology of binge eating differs within the context of each eating disorder. Moreover, there is currently no consensus as to whether binge eating has one specific etiological foundation. Binge eating is a complex behavioural pattern and accounting for it with a single cause may be misleading (Polivy & Herman, 1993). However, it does appear that there are a few consistent psychological and sociocultural factors that play a role in binge eating.

#### *Sociocultural Pressure*

Over the past several decades, a great deal of the literature on eating disorders has focused on the sociocultural pressure to be thin, and the corresponding impact this thin ideal has had on the prevalence of eating disorders (Thompson, Coover, & Stormer, 1999). The cultural message implicit in nearly all facets of Western society has placed increasing demands on young women to be attractive and thin. Sociocultural notions of beauty in Western cultures equate thinness with beauty, femininity and happiness (Striegel-Moore & Smolak, 2000). The repeated exposure to these messages has led to a widespread acceptance and internalization of the thin ideal (Cash, 1995). The body shape that many young women seek does not come naturally to most and failure to obtain this goal is nearly inevitable. Thus, the internalization of this thin ideal has also been accompanied by a high degree of body-image dissatisfaction (Brown, Cash, & Lewis, 1989). Body dissatisfaction and wanting to be thinner has contributed to the increasing prevalence of dieting (Polivy & Herman, 1993). The relationship between internalization

of the thin ideal and the development of eating disorders is further explained in the context of the restraint model in the section below.

### *Self-Esteem*

Although there are many psychological characteristics that may contribute to the development of binge eating, self-esteem is one that has received a great deal of attention. Self-esteem has been implicated in dieting in two ways. First, it has been suggested that having low self-esteem makes an individual vulnerable to the sociocultural pressure to be thin and thus more likely to diet (Polivy & Herman, 1993). A significant relationship has been found between self-esteem and chronic dieting status and between self-esteem and body dissatisfaction (Heatherton & Polivy, 1992). Button and colleagues (1996) conducted a longitudinal study showing that low self-esteem in 11-12 year old females was found to predict the onset of eating disorder symptoms five years later. Low self-esteem is thought to result in body image dissatisfaction which disposes individuals to be more vulnerable to accepting the thin ideal. Accepting and striving to achieve the thin ideal, in turn, increases the likelihood that the individual will diet, and possibly break their diet by binge eating. Alternatively, those who decide to diet and encounter failure to lose weight due to binge eating and loss of control over eating experience decreased self-esteem with each successive dieting failure (van den Berg, Thompson, Obremski-Brandon, & Covert, 2002). Thus, low self-esteem could be either a precondition of dieting, or it could be an outcome of unsuccessful dieting and binge eating (Polivy & Herman, 1993). Although it is currently unknown whether self-esteem is a precursor or a result of dieting, binge eating does appear to be more prevalent in those with low self-

esteem (Polivy et al., 1988).

Self-esteem and the thin ideal have been acknowledged to play significant roles in the etiology of binge eating. However, it is likely that the mechanisms behind binge eating are more dynamic than self-esteem or degree of internalization of the thin ideal. Thus, the current literature discussing etiological mechanisms has focused primarily on two principal explanatory models, the restraint model and the affect regulation model. Both these models focus on antecedent factors of binge eating but consider somewhat different timelines for these binge antecedents.

#### *Restraint Model*

The restraint model of binge eating encompasses several psychological factors and has been acknowledged as one of the most widely accepted etiological models of binge eating (Polivy & Herman, 1985). This model proposes that the current sociocultural pressure to be thin is a pathway to binge eating. As described above, the internalization of the thin ideal often leads to chronic body dissatisfaction, which, in turn, leads to dieting. Chronic dieting has been cited as a contributing factor in the development of binge eating (Abraham & Beumont, 1982; Heatherton & Polivy, 1992; Polivy & Herman, 1985; Polivy, 1999). To date, most research conducted on dieting has been with females, however, increasingly males are engaging on this behaviour as well (McCabe & Ricciardelli, 2003). Women who strongly believe in the importance of having an ideal body shape restrict their food intake in unrealistic ways in order to achieve their goal of weight loss. However, the goal of weight loss is rarely achieved, as restraining food intake leaves individuals both physiologically (nutritionally deprived) and psychologically

(lowered mood) susceptible to periodic loss of control over eating, or binge episodes (Heatherton, Polivy, & Herman, 1990; Herman & Polivy, 1990). Additional evidence suggesting a link between restrained eating and binge is a study showing that a majority of BN patients appear to have dieted prior to their first binge episode (Mitchell et al., 1999). Moreover, dieters also report that overeating or binge eating episodes typically result from cravings brought on by restricting food intake (Telch & Agras, 1993). In these instances, the diet appears to precede the binge episode.

A different pattern emerges among individuals who suffer from BED. For example, clinically-based research on BED suggests that unlike their counterparts with BN, a significant portion of individuals with BED report that their first binge episodes occurred before their first diet and that dieting is a result of, rather than a precursor to, binge eating (Spitzer et al., 1993; Spurrell, Wilfley, Tanofsky, & Brownell, 1997). In one study, only 8.7% of individuals with BED reported having been on a low-calorie diet prior to the onset of binge eating (Wilson, Nonas, & Rosenblum, 1993). Spurrell and her colleagues (1997) noted that differences between those who binge first and those who diet first suggests that the restraint model cannot explain binge eating in a significant group of those who binge eat.

### *Affect Regulation Models*

The dietary restraint model has been predominant in guiding research and clinical work. However, more recent evidence suggests that the restraint model needs to be complimented by an understanding of affect-driven eating (Telch & Agras, 1996). Thus, several alternatives to the restraint model have been proposed. The primary emphasis of



alternative theories is on mood and negative experiences as the key antecedents to binge eating. The affect regulation model posits that heightened emotional disturbance increases the likelihood that a person will binge (Abraham & Beumont, 1982; Baucom, 1981; Greeno, 2000; Paxton & Diggins, 1997). Specifically, individuals binge eat when they experience distress because binge eating temporarily decreases their negative emotions, provides comfort, and distracts them from their negative affect. Thus, the relationship between negative affect and binge eating implies that the negative mood is a proximal antecedent of bingeing (Telch & Agras, 1996). Several variations of the overarching affect regulation theory have been proposed to explain the specific mechanism behind binge eaters' tendency to eat in response to emotional distress (Heatherton & Baumeister, 1991).

The comfort hypothesis proposes that the affective regulatory purpose of binge eating is to provide comfort or consolation to distressed dieters or obese individuals who are usually dieting (Polivy, 1999). According to this theory, those who engage in binge eating find a great deal of comfort in food and eating. In nonbingers, eating does not provide enough comfort to offset the typical appetite suppressing effects that are activated by stress (Polivy, 1999). In other words, under high distress, the nervous system typically acts to suppress appetite, leaving the distressed individual with a lack of hunger. However, in those who find comfort in eating (i.e., binge eaters), being distressed acts as a signal to desire eating, in hopes that the act of (binge) eating will provide some comfort (Polivy, 1999).

Rather than simply providing comfort, it has also been suggested that eating may serve as a distraction from one's worries or distress (Polivy & Herman, 1988). Again, this

theory applies more directly to dieters than to nondieters, who do not derive enough benefits from eating to find it useful as form of distraction from distress. For bingers, eating may be sufficiently engrossing to keep attention focused away from distressing circumstances. Thus, under times of increased negative affect, these individuals may engage in binge eating so as not to think about the source of their affective distress (Polivy & Herman, 1988).

### *Escape Theory*

In addition to being a comfort and a distraction, binge eating may also be used as an escape from aversive self-awareness (Heatherton & Baumeister, 1991). Escape theory is based on the notion that binge eaters are individuals who tend to have high personal expectations related to their body weight and shape. Their self-image is strongly tied to their appearance and they tend to strongly subscribe to the socioculturally transmitted thin ideal (Polivy et al., 1988). Thus, according to escape theory, in addition to having a strong desire for a thin, attractive physique, binge eaters also have a stronger than usual desire to be perceived favourably by others (Heatherton & Baumeister, 1991). Binge eaters are thought to have high levels of self-awareness that are reflected in the belief that other people pay close and critical attention to their behaviour. These three attitudinal aspects of binge eaters combine, resulting in negative self-assessment and negative affect, or more specifically depression (Heatherton & Baumeister, 1991). Under these circumstances, individuals are motivated to reduce their level of self-awareness in order to escape these negative experiences. This is thought to be accomplished by binge eating, during which cognitions and the focus of attention are narrowed to simple actions and sensations

(Heatherton & Baumeister, 1991). Thoughts about the self are extinguished and replaced by the physical sensations associated with eating.

*Empirical Evidence for Affect Regulation Theories*

To date, there is no consensus on whether binge eating for affect regulation is motivated by comfort, distraction or escape from awareness. It is also possible that there are individual differences in the motivations for binge eating. However, a great deal of research has suggested that negative affect certainly appears to be an antecedent of binge eating.

In an early study of bulimic patients, Abraham and Beamont (1982) found that nearly all participants reported that their binge episodes were usually preceded by anxious, tense, and dysphoric mood states. Self-monitoring records found that bulimic participants reported more negative mood in the hours prior to a binge compared to their moods prior to a meal or snack (Deaver, Miltenberger, Smyth, Meidinger, & Crosby, 2003). Studies using handheld computers to obtain momentary ecological assessment of mood have found that binge eaters report more negative affect on binge versus nonbinge days (Wegner, 2002), in addition to feeling less in control of their eating on binge days (Greeno, 2000). Dysphoric mood states were reported as the most common precipitant of binge eating in patients with binge eating disorder. Higher levels of binge eating in BED participants is associated with the desire to eat when experiencing negative moods (Telch & Agras, 1996). Stickney and colleagues (1999) found that college women who binged reported feeling down or sad, upset, empty, hopeless, stressed, and overwhelmed prior to binge eating. These women then reported feeling better, relieved, good, and content while

binge eating. These results support the affect regulation model of binge eating.

Participants who experienced negative affect before binge eating episodes reported that their affect became less negative during binges, and then, once again, became more negative after binging. These results are consistent with those of others who have demonstrated that binge eating temporarily decreases negative affect experienced before binge episodes (Deaver et al., 2003; Greeno, 2000; Telch & Agras, 1996).

Laboratory studies, primarily using female undergraduate students, have examined the influence of affective states on eating in dieters and have provided an analogue model for understanding the role of affective states on binge eating. Baucom and Aiken (1981) manipulated distress in a laboratory experiment via perceived failure on a series of concept formation problems and found that after a depressed mood was induced, dieters ate more than nondieters. When the dieters were not depressed, however, they ate less than their nondieting counterparts. Cattanach, Malley and Rodin (1988) found that female undergraduates who demonstrated more eating pathology reported an increased desire to binge in response to a series of four laboratory-induced stressors compared to a group of low-disordered eaters. In this study, participants were asked to participate in four psychologically stressful tasks. These tasks involved: 1) listening to a vignette about interpersonal conflict and imagining herself in the situation, 2) performing an audiovisual conflict task, 3) preparing and delivering a brief speech to an audience, and 4) listening to a vignette about feeling socially isolated. Eating disordered participants reported feeling a significantly greater desire to binge during the interpersonal conflict vignette and the social interaction vignette, indicating that stressors involving interpersonal isolation,

rejection, or disappointment are likely related to binge episodes (Cattanach, 1988).

Schotte, Cools, and McNally (1990) also tested the effects of negative affect on eating in restrained or unrestrained eaters in a laboratory setting. In this study, participants were classified as being restrained eaters if they scored above the median on the Revised Restraint Scale. Their results indicated that exposure to a frightening film, as compared to a neutral film, was associated with increases in anxiety, sadness and anger. Restrained eaters who were exposed to the frightening film ate more than restrained eaters who saw the neutral film and unrestrained eaters who were exposed to either film. These results provide evidence that negative affect may trigger overeating in restrained, but not in unrestrained eaters.

Telch and Agras (1996) used guided imagery to induce negative mood in binge eaters and found that negative emotional states were associated with loss of control over eating and labeling an eating episode as a binge in a group of binge eaters. However, the prediction that binge eaters who were exposed to the negative mood induction would eat more than all other groups was not confirmed. The authors suggested that the laboratory setting may not adequately imitate factors influencing participants eating in their natural environment (Telch & Agras, 1996). However, it is possible that the mood induction procedure may not have adequately imitated factors that were sufficiently emotionally evocative to induce a mood negative enough to trigger binge eating.

In addition to laboratory studies of binge eating, studies using statistical procedures such as path analysis have also been employed to help clarify the possible etiological and psychosocial variables associated with binge eating. Path analyses have

revealed that dietary restraint, negative affect, weight cycling, history of teasing, and body dissatisfaction interact to form a psychosocial model of binge eating (Womble et al., 2001). The results of this study indicated that the etiology of binge eating is likely more multifaceted than the original affect regulation and restraint theories proposed. Thus, it appears that additional factors need to be explored in order to more fully comprehend the mechanisms behind binge eating behaviour.

### *Weight-Related Teasing and Binge Eating*

Teasing has been recognized both anecdotally and in the research literature as a potentially negative experience. Womble and colleagues (2001) found that a history of teasing played a role in a psychosocial model of binge eating. However, the role of teasing in binge eating models must be explored in more depth.

The goal of teasing is to inflict psychological distress upon a target. Although teasing can be used in the context of affectionate joking, it can also be used to demean and embarrass. In instances where teasing is meant to be hurtful, the perpetrator can shirk responsibility by claiming that he or she was “only kidding”, thus disavowing himself or herself from the hurtful effects of the teasing (Kowalski, 2000). Thus, teasing is defined as a “personal communication from an agent to a target that includes four components: aggression, humour, ambiguity, and identity confrontation” (Kowalski, 2004, p. 332). In the research literature, teasing has been widely used to refer to three behaviours, prosocial teasing, cruel teasing and bullying. However, for the purposes of this research, teasing refers primarily to antisocial teasing, which includes both cruel teasing and bullying, which is typical higher in aggression and identity confrontation (Kowalski, 2004).

Teasing in general has been shown to have a variety of negative impacts. Research shows that teasing can be hurtful and can be interpreted as veiled criticism or as an indication of interpersonal rejections and social exclusion (Kowalski, 2000). Several studies have found that appearance-related teasing is especially distressing and can have a profound effect on the victims' feelings. In an investigation into the effects of teasing, Kowalski (2000) asked participants to write a description of an especially powerful and memorable experience of being teased. Kowalski (2000) tested a random sample of university students and found that more than 45% of the participants described an incident of being teased about their appearance, an overwhelming majority in this particular study. These results not only indicated that appearance-related teasing was frequently experienced by the participants but also that being teased about appearance was a memorable event years later (Kowalski, 2000).

Physical appearance represents a readily observable feature, and is therefore an easy target for teasing. Physical appearance is also a primary factor influencing perceptions of social approval and acceptance. For a perpetrator who desires to hurt his or her victim, a key means of doing this is to imply through teasing about appearance, that the person is not socially acceptable (Kowalski, 2000). Further, teasing about physical characteristics can be especially hurtful and exclusionary because of the target's inability to control these features. Thus, teasing about one's physical appearance is particularly likely to induce hurt feelings and negative self-evaluations (Kowalski, 2000).

The consequences of appearance-related teasing may be more long-term and damaging than the immediate consequence of hurt feelings. In a survey of 4000 men and

women about appearance-related feedback and body image, forty-four percent of women surveyed reported that being teased by others was a factor in shaping their body image (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). Cash (1995) found that 72% of women had been teased about their appearance in the last five years, with 71% of these women reporting that they believed the teasing to have affected their body image. Moreover, a recent study by Eisenberg, Neumark-Sztainer and Story (2003) found that weight-related teasing was also related to depressions and thoughts (and attempts) of suicide among adolescents.

There is extensive evidence indicating that teasing is associated with body dissatisfaction. One of the first studies in this area found that teasing frequency and the degree of distress the teasing produced were associated with higher levels of body dissatisfaction, eating disturbance, depression and lower self-esteem (Fabian & Thompson, 1989). Several studies have examined the impact of weight-related teasing by asking female university students to recall experiences of being teased and relating these retrospective accounts to current levels of body dissatisfaction (Cash, 1995; Thompson & Psaltis, 1988). In each of these studies, measures of teasing were significantly associated with current levels of body image. The findings were further replicated in additional samples of university females and in a sample of obese adult women (Grilo, Wilfley, Brownell, & Rodin, 1994; Paxton, Schutz, Wertheim, & Muir, 1999). In a 3-year longitudinal study, Catterin and Thompson (1994) found that teasing predicted increases in body dissatisfaction. Further, being overweight also served as a significant predictor for weight-related teasing. Thompson and his colleagues (1995) used covariance structure



modeling to examine the relationships between teasing, weight status, body image and eating disturbance. Teasing was found to be significantly associated with both body dissatisfaction and eating disturbances. However, this study suggested that in addition to the direct role that teasing plays in this complex relationship between variables, it also acts as a mediator between weight status and body image. Thus, level of obesity was not directly related to body image; instead, its effect was mediated by teasing. In particular, only those individuals who were overweight and experienced weight-related teasing suffered from negative body image (Thompson, Coover et al., 1995).

Weight status has been acknowledged as a significant factor in the frequency of teasing. Although the literature indicates that a large percentage of individuals experience appearance-related teasing, overweight individuals appear to be more vulnerable to being teased about their physical appearance (Neumark-Sztainer et al., 2002). In an interview study of 50 overweight adolescent girls, all but two described being teased and stigmatized about their weight (Sherwood & Neumark-Sztainer, 2001). Adolescent girls who are teased about their weight are more likely to display psychological, body image, and/or eating disturbances. Numerous studies have examined peer influence on eating and body image (Muir, Wertheim, & Paxton, 1999; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). High school girls who reported higher levels of dieting reported being teased more often by peers about their weight and shape, and reported that this appearance-related feedback influenced their decision to diet (Paxton et al., 1999). Neumark-Sztainer and her colleagues (2002) also found a strong association between weight-related teasing and disordered eating behaviour; individuals who were teased

about their weight were significantly more likely to engage in eating disordered behaviour. Brown, Cash, and Lewis (1989) found that females who engaged in the binge-purge cycle were more likely than controls to report being teased or rejected about their appearance. Being teased or criticized about one's weight and/or shape by family members has also been significantly correlated with body dissatisfaction, investment in thinness, weight management behaviour and eating disturbance (Levine, Smolak, & Hayden, 1994). Overall, this body of research indicates that weight-related teasing has a damaging impact on the victims.

The evidence so far supports the role of teasing in the development of disordered eating and body image disturbance. However, the majority of research on teasing has relied on retrospective self-report methodology, the validity of which has been questioned (Neumark-Sztainer et al., 2002). Perceived teasing certainly is a subjective variable. It is possible that the prevalence of weight-related teasing is either higher than reported and goes unrecognized, or that the prevalence is lower but is magnified in the experience of the victims of this teasing (Neumark-Sztainer et al., 2002). Most importantly, present disordered eating and body image disparagement may lead to over-reporting of past weight and shape related teasing.

To date, no reported study has manipulated weight-related teasing using a randomized experimental design. Given what is known about the impact of weight-related teasing, there are certainly ethical implications of providing negative verbal feedback to participants regarding physical appearance. Thus, researchers have relied on using narratives and vignettes to examine the impact of teasing. Kowalski (2000) asked

university students to write two narratives related to teasing, one where they were the perpetrator of the teasing and one where they were the victim of teasing. This study revealed that 45% of the incidents recounted by victims focused on being teased about their physical appearance, indicating its salience in the memories of the victims of teasing. Furman and Thompson (2002) constructed a series of vignettes describing either positive or negative social interactions that focused on either appearance issues or abilities. Participants were asked to rate their mood and body satisfaction after reading the vignette. The results indicated that participants with high levels of body dissatisfaction had the most negative changes in mood and body image after reading the negative appearance-related scenarios.

Furman and Thompson (2002) experimentally examined the influence of teasing on an individual's mood and body dissatisfaction by using a vicarious exposure strategy. Undergraduate females read vignettes that involved a female receiving a comment from another person regarding either some aspect of her appearance or her abilities. The results of this study revealed that a mood disturbance was elicited in those participants who read the vignettes about teasing, indicating that, as a negative mood induction variable, teasing vignettes demonstrate some success.

### *Goals of the Present Research*

Currently, there is a general consensus in the literature that weight-related teasing plays a role in the development of body image dissatisfaction and is implicated in binge eating (Cash, 1995; Grilo et al., 1994; Neumark-Sztainer et al., 2002; Womble et al., 2001). There is also general consensus that negative affect plays a role in triggering binge

eating (Deaver et al., 2003; Heatherton & Baumeister, 1991; Telch & Agras, 1996). For example, Womble and colleagues (2001) reported a statistical link between weight-related teasing and binge eating in females, with negative affect playing a mediating role in the relationship of these two variables. However, to date, no published studies have directly tested the influence of weight-related teasing on binge eating using an experimental design. As described in previous sections, past experimental research has been successful in finding differences in the amount eaten between binge eaters and nonbinge eaters in response to some negative mood induction procedures (Baucom, 1981; Cattanach, 1988; Schotte et al., 1990). In each of these studies, the mood induction procedures differed somewhat, with none of them using teasing to elicit negative mood in participants.

The present research was designed to build upon these previous findings using teasing as a mood induction technique in a sample of binge eaters and nonbinge eaters. Like Furman and Thompson's (2002) study, the present research used vicarious exposure to teasing using vignettes. Moreover, this research expands upon studies examining differences in eating between binge eaters and a nonbingeing comparison group in a laboratory setting. The classic taste test format (Herman, Fitzgerald, & Polivy, 2003) was used to determine the impact of weight-related teasing on mood and eating.

This research was completed in two stages. Study 1 was a preliminary test of the idea that weight-related teasing impacts eating behaviour in binge eaters. This first study explored the impact of weight-related teasing on mood and eating by exposing participants to a vignette describing weight-related teasing or a similar, neutral vignette. Study 2 was conducted to build upon the results of Study 1 and examined the specific

effects of weight-related teasing on eating and mood by differentiating it from academic-related teasing.

### *Study 1 Hypotheses*

Study 1 served as an exploratory investigation of the impact of weight-related teasing on both mood and eating. Three primary predictions were hypothesized for this study.

1.) It was predicted that binge eaters would score higher on the weight-related teasing subscales of the Perception of Teasing Scale (POTS) as compared to nonbinge eaters. Higher scores on this measure are indicative of a more extensive frequency and impact of weight-related teasing. Previous research indicates that weight-related teasing plays a role in the onset of eating disturbances and those who experience high levels of distress after being teased about their weight have been found to be more likely to engage in pathological patterns of eating, such as binge eating (Sherwood & Neumark-Sztainer, 2001).

2.) As indication of the efficacy of using a teasing vignette to induce negative mood, it was predicted that participants who read the weight-related teasing vignette would report higher levels of negative affect as compared to those who read the neutral vignette.

3.) With respect to food consumption/eating, it was predicted that, overall, binge eaters would eat more than the nonbingeing comparison group. It was also predicted that there would be an interaction between binge status (binge eater or nonbinge eater) and the vignette read (weight-related teasing or neutral). It was expected that binge eaters who

read the weight-related teasing vignette would eat more than binge eaters who read the neutral vignette and nonbinge eaters exposed to either vignette.

## Method - Study 1

### *Participants*

Eighty-eight females enrolled in undergraduate psychology courses at the University of Windsor participated in the study. All participants received course credit for their participation in the study. Participants were recruited from the psychology participant pool over three academic semesters, beginning in February 2003 (see Table 1 for characteristics of the participant pool sample).

Psychology students who chose to enroll in the participant pool were asked to respond to several screening questions. The two screening questions used in this study were as follows: (1) During the last 6 months, have there been times when you felt you have eaten what other people would regard as an unusually large amount of food given the circumstances (e.g. a quart of ice cream)? YES or NO, and (2) During the times when you ate an unusually large amount of food, did you experience a loss of control (feel that you couldn't stop eating or control what or how much you were eating)? YES or NO.

Lists of potential participants were generated by the staff of the psychology participant pool on the basis of students' responses to the above two screening questions. Random lists of females who responded affirmatively to both screening questions were generated (typically 20 names per list), as were similar random lists of females who responded negatively to both screening questions. Potential participants' responses to these initial screening questions did not result in assignment to the comparison or binge eater group, but rather served as screening measure to help the investigator more effectively target the desired group (binge eaters). Binge group assignment was based on

Table 1.

*Characteristics of Psychology Participant Pool by Semester of Testing - Study 1*

## Winter 2003

Total number of students enrolled in participant pool	1446
Total number of females enrolled in participant pool	1137
Number of females answering "YES" to binge screening questions	164
Number of females answering "NO" to binge screening questions	973
Number of "YES" females supplied by participant pool	30
Number of "NO" females supplied by participant pool	30
Binge eaters who took part in study	10
Nonbinge eaters who took part in study	14

\* Remaining 36 females whose names were supplied by the participant pool either could not be contacted, were not interested in participating or had already earned all possible bonus points.

## Fall 2003

Total number of students enrolled in participant pool	1510
Number of females enrolled in participant pool	1247
Number of females answering "YES" to binge screening questions	204
Number of females answering "NO" to binge screening questions	1043
Number of "YES" females supplied by participant pool	20
Number of "NO" females supplied by participant pool	70
Binge eaters who took part in study	4



Nonbinge eaters who took part in study	41
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\* Remaining 45 females whose names were supplied by the participant pool either could not be contacted, were not interested in participating, had already participated in this study, or had already earned all possible bonus points.

#### Winter 2004

Total number of students enrolled in participant pool	1636
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Number of females enrolled in participant pool	1323
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Number of females answering "YES" to binge screening questions	99
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Number of females answering "NO" to binge screening questions	1224
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Number of "YES" females supplied by participant pool	30
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Number of "NO" females supplied by participant pool	0
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Binge eaters who took part in study	12
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Nonbinge eaters who took part in study	7
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\* Remaining 11 females whose names were supplied by the participant pool either could not be contacted, were not interested in participating, had already participated in this study, or had already earned all possible bonus points.

participants' responses to two specific questions on the Binge Scale. Participants who reported binge eating "at least once or twice a week" or more and reported feeling at least "somewhat out of control" on the Binge Scale were assigned to the binge group. The comparison group was comprised of individuals who reported that they do not binge eat at least once a week and do not experience loss of control over their eating.

Once participants' binge eating symptoms were determined, 26 participants met the criteria for the binge eater group, and the remaining 62 participants were placed in the comparison group. Participants were given final binge group assignment (binge eater or nonbinge eater) once they had completed all study questionnaires and their responses to the Binge Scale could be inspected.

### *Materials*

#### *Food Stimuli*

Three flavors of cookies - oatmeal raisin, chocolate chip, and double chocolate - were used as the food stimuli in this study. All cookies were home baked by the experimenter, using the same recipes for all participants (see Appendix A for recipes). As per the typical procedure (McFarlane, Polivy, & Herman, 1998), cookies were standardized in size by using a melon baller to measure out the cookie dough before baking. Each plate consisted of a pile of 35 small cookies, for a total of 105 cookies presented to each participant. Each plate of cookies was counted and weighed with a standard digital postal scale both before and after being presented to the participant.

#### *Social Interaction Vignettes*

Two social interaction vignettes were constructed: one described a female who

experiences teasing on account of her weight, and one parallel neutral vignette that did not include any teasing content. An attempt was made to create a realistic social interaction involving peer teasing. The weight-related teasing vignette included components of the weight teasing subscale of the Perception of Teasing Scale (POTS) (Thompson, Cattarin, Fowler, & Fisher, 1995). See Appendix B for vignettes.

*Positive and Negative Affect Schedule (PANAS)*

The PANAS (Watson, Clark, & Tellegen, 1988) was used to assess negative affect after reading the social interaction vignettes. This scale is one of the most widely used affect measurement scales (Schumukle, Egloff, & Burns, 2002). The PANAS is a 20-item self-report measure that is divided into 2 subscales, measuring positive and negative affect, respectively. Respondents indicate the extent to which they are experiencing several different emotions using a 5 point Likert scale. Sample items from the Positive Affect subscale include: “interested”, “enthusiastic” and “determined”. Sample adjectives from the Negative Affect subscale include: “distressed,” “irritable,” and “jittery.” Both subscales are coded so that higher scores reflect greater affect levels (either positive or negative). External validity investigations indicate that correlations between the Negative Affect subscale and various other measures of distress and psychopathology ranged from .51 to .94, indicating that the PANAS is a good measure of negative affect (Watson et al., 1988). The PANAS can be used to assess affect across several different time instructions. In the present study, participants were asked to respond to how they felt at that moment. Internal consistency reliability for the two subscales using the “Moment” time instructions are: Positive Affect ( $\alpha = .89$ ) and Negative Affect ( $\alpha = .85$ )(Watson et al., 1988).

See Appendix C for PANAS.

### *Binge Scale*

The Binge Scale was used to assess both behaviour and attitudes associated with binge eating, such as frequency of binge eating, and feelings associated with binge eating (Hawkins & Clement, 1980). This is a nine-item self-report scale that uses a multiple choice format and includes questions such as, “How often do you binge? A) Seldom, B) Once or twice a month, C) Once a week, or D) Almost every day”, and “Which most accurately describe your feelings after a binge? A) Not depressed at all, B) Mildly depressed, C) moderately depressed, or D) Very depressed.” The binge scale has been reported as having good internal consistency (Fairburn & Wilson, 1993), good construct validity and has been demonstrated to have one month test-retest reliability greater than 0.88 (Hawkins & Clement, 1980). See Appendix D for Binge Scale.

### *Perception of Teasing Scale (POTS)*

This 11-item self-report scale measures history of weight and competence teasing (Thompson, Cattarin et al., 1995). This scale was specifically designed with the impact of teasing on body dissatisfaction and is an extension of the Physical Appearance Related Teasing Scale (Thompson, Fabian, Moulton, Dunn, & et al., 1991). The POTS is divided into four subscales, with two measuring the frequency of teasing (Weight Teasing-Frequency and Competency Teasing-Frequency), and two measuring the effect or emotional impact of the teasing (Weight Teasing-Effect and Competency Teasing-Effect). The two teasing Frequency subscales are rated using a 5 point Likert-type scale which provides endpoints of “Never” and “Very Often.” Sample items from the teasing

frequency subscales include: “People made jokes about you being heavy” (Weight Teasing-Frequency), and “People laughed at you because you didn’t understand something” (Competency Teasing-Frequency). Following each teasing frequency item, respondents are asked to rate “How upset were you?” on a 5 point Likert-type scale that uses the endpoints “Not Upset” and “Very Upset.” The two teasing effect subscales are calculated using the responses to these questions. Internal consistency ratios for this scale were found to be acceptable and the POTS has been shown to have good criterion validity when correlated with other measures of body dissatisfaction, body image anxiety, and eating disturbance ( $r$  scores ranging from .30-.48). Test-retest reliabilities for the four subscales were reported as follows: Weight Teasing-Frequency ( $r = .90$ ), Weight Teasing-Effect ( $r = .85$ ), Competency Teasing-Frequency ( $r = .82$ ), and Competency Teasing-Effect ( $r = .66$ ; see Appendix E for POTS).

#### *Revised Restraint Scale (RRS)*

The Revised Restraint Scale was used to measure dietary restraint (Polivy, Herman, & Warsh, 1978). In this particular study, the RRS was included to determine if there were systematic differences in restraint status between the experimental groups. It consists of 12 items that assess diet and weight history and concern with food and eating (Heatherton, Herman, Polivy, King, & et al., 1988). This self-report measure was used to divide participants into restrained and unrestrained eaters. It consists of two subscales: Weight fluctuation and Concern for Dieting. Sample items of the Concern for dieting subscale include “How often are you dieting?” and “Do you have feelings of guilty after overeating?” A sample item from the Weight Fluctuation subscale is “Would a weight

fluctuation of 5 lbs. affect the way you live your life?” Individuals with scores of 14 and below were classified as “unrestrained” eaters and those who scored 15 and above were classified as “restrained” eaters, as is conventional in research using female undergraduates (Herman et al., 2003). The Revised Restraint Scale has been demonstrated to have high test-retest reliability and internal consistency, .95 and .82, respectively (Allison, Kalinsky, & Gorman, 1992). See Appendix F for Revised Restraint Scale.

#### *Body Mass Index (BMI)*

Similarly to the Revised Restraint Scale, participants’ body mass index was measured to determine if there were systematic differences in height and weight between the experimental groups. BMI is calculated by dividing weight (in kilograms) by height (in metres) squared. BMI is generally considered the preferred index of relative body weight as a reflection of adiposity (Kraemer, Berkowitz, & Hammer, 1990).

#### *State Self-Esteem Scale (SSES)*

The SSES is a 20-item Likert-type self-report scale designed for measuring temporary changes in individual self-esteem (Heatherton & Polivy, 1991). There are three self-esteem factors in this scale: Academic Performance, Social Evaluation, and Appearance. A sample item from the Academic Performance subscale is: “I feel that I have less scholastic ability right now than others.” The Social Evaluation subscale includes items such as, “I feel that others respect and admire me.” Finally, sample items from the Appearance subscale include: “I am pleased with my appearance right now,” and “I am dissatisfied with my weight.” The SSES has been demonstrated as having discriminant validity from mood, state anxiety, self-consciousness, and dieting behaviour.

Coefficient Alpha for the scale equals .92 (Heatherton & Polivy, 1991). See Appendix G for SSES.

### *Procedure*

Upon being contacted, participants were asked to participate in a taste test study investigating the effects of recalling certain memories on taste ratings (see Appendix H for contact script). This cover story was used to mask the true purpose of the study. Participants were instructed to eat a moderate amount of food between one and three hours before their appointment, to help assure some uniformity and a relatively neutral state of hunger.

All participants were run individually by the same investigator, a doctoral candidate in clinical psychology between the hours of 12 and 6 p.m., as is standard procedure in “taste test” style eating studies (McFarlane et al., 1998). Upon arrival in the lab, participants were asked to read and sign the consent form (Appendix I) and were given a copy of the letter of information (Appendix J) for their records. Participants were reminded that the purpose of the study was to investigate the manner in which memories affect individual’s perceptions of taste. Participants were informed that they would be taste-testing three kinds of cookies. After consenting to participate, participants were randomly assigned to the weight-related teasing or neutral condition and were given the corresponding vignette to read. Participants were instructed to read the vignette carefully and were asked to identify with the character in the vignette as much as possible (see Appendix K for complete study instructions). At this time, the investigator left the room to allow the participants to read the vignettes in private. As a manipulation check, after

reading the vignette, the participants were asked to rate how strongly they identified with the main character in the vignette (see Appendix L).

Following reading the vignette, participants were told that the cookies for the taste test were still warming and they were asked whether they would mind completing a questionnaire for another student doing a study while they wait for the cookies. At this time, the PANAS was administered, along with several demographic questions (Appendix M). The cover story at this point was intended to mask the importance of the mood variable in case of possible expectancy effects.

Once these two questionnaires were completed, the experimenter entered the room once again, this time carrying a tray with the three plates of cookies and a glass of water. Participants were given the cookie taste rating form (Appendix N) and were informed they would be sampling three flavours of cookies - oatmeal raisin, chocolate chip and double chocolate chip. The cookies were presented to the participant as either cookie “A,” “B,” or “C,” the order of which was randomly determined. All cookies were home baked by the experimenter, using the same recipes for all participants. Cookies were standardized in size by using a melon baller to measure out the cookie dough before baking. Each plate consisted of a pile of 35 small cookies, for a total of 105 cookies presented to each participant. Each plate of cookies was weighed before being presented to the participant.

Participants were given the entire instructions for the taste test before the experimenter left the participant alone in the room to complete this phase of the study. Participants were instructed to begin by taking a sip of water to cleanse their palate and



then to begin testing cookie “A.” They were instructed to eat as many of these cookies as necessary to complete their ratings. Participants were told that once they were satisfied with their ratings of cookie “A,” they were to take another sip of water and to proceed to cookie “B,” following the same protocol as they had for cookie “A.” However, once participants have moved on to cookie “B,” they were not to go back and change their ratings of cookie “A.” Upon completion of rating cookie “B,” they were to take another sip of water and continue on to cookie “C.” Once this explanation had been offered to participants, the experimenter left the room to avoid any social influence, informing the participants on the way out that she would return in approximately ten minutes and that once they had completed their ratings they should feel free to help themselves to the cookies as there were “plenty” left.

Following the taste-test period which lasted exactly 10 minutes, as is standard procedure in “taste test studies” (McFarlane et al., 1998), the experimenter removed the three plates of cookies and asked the participants to complete some additional questionnaires. Participants completed, in random order: the Binge Scale, the Perception of Teasing Scale, the Revised Restraint Scale, and the State Self-Esteem Scale. During this time, the cookies were both weighed and counted to determine the participant’s consumption.

Once the questionnaires were completed, participants were debriefed (Appendix O) and the true purpose of the study was explained in detail. Participants were encouraged to express any thoughts or feelings they had about the study. At this point, participants were given the option to have their data removed from the study. All participants agreed

to allow their data to stand and to be part of the study's database. Following debriefing, participants were asked if they would mind having their height and weight measured to obtain a measure of Body Mass Index (BMI). Participants were made aware of the importance of having accurate measures of height and weight for the study. Those who agreed to participate in this portion of the study were asked to sign an additional consent statement (Appendix P) indicating that they agreed to this procedure since it was not covered in the original consent form. Of the total 88 participants who took part in this study, only five declined to be weighed.

Finally, participants were given a list of psychological resources in the event that they experienced any negative affect or incidences that they wished to discuss with a professional. There were no incidences where any participant outwardly expressed negative affect, either during the course of the study or the debriefing.

This study has been reviewed and received ethics clearance through the University of Windsor Research Ethics Board.

### *Experimental Design*

Study 1 used a 2 X 2 factorial design. The two independent variables explored in this study were binge status (binge eater or nonbinge eater) and vignette (weight-related teasing or neutral). The primary dependent variables were: weight-related teasing history, negative affect reported, and number of cookies consumed.

## Results - Study 1

### *Approach to Data Analysis*

All analyses were performed using SPSS for Windows, Version 11.5. Descriptive analyses were performed on all variables included in the present study. Following descriptive analyses, a manipulation check was performed as well as several analyses of variance (ANOVAs) designed to investigate participants' teasing history and the effect of the experimental manipulation on negative affect and eating. The criterion for statistical significance employed in all analyses was the .05 level.

### *Descriptive Statistics and Scoring of the Measures*

Demographic information for binge eaters, nonbinge eaters and the entire sample is presented in Table 2. Descriptive statistics for all variables in Study 1 are displayed in Table 3.

### *Eating Behaviour*

Eating was quantified in the present study by counting the number of cookies each participant consumed during the mock taste test portion of the study. The mean number of cookies consumed was 7.39 ( $SD = 3.75$ ) and number of cookies eaten ranged from 3-26 cookies. Prior to conducting further analyses, the "number of cookies eaten" was assessed using a Q-Q plot, a histogram, and the Kolmogorov-Smirnov (KS) statistic. A visual inspection of the Q-Q plots and the histograms revealed that this dependent variable was positively skewed. Similarly, the Kolmogorov-Smirnov statistic also indicated that this variable was significantly skewed and that the distribution of scores was not normal (Field, 2000). A logarithmic transformation is among the recommendations for data that

Table 2.

*Demographic Information for Binge Eaters and Nonbinge Eaters - Study 1*


---

<u>Variables</u>	<u>Binge Eaters (n = 26)</u>		<u>Nonbinge Eaters (n = 62)</u>	<u>Total (n = 88)</u>
Age	<i>M</i>	20.16	21.93	21.43
	<i>SD</i>	2.01	5.16	4.52
Year of University	<i>M</i>	1.88	2.23	2.15
	<i>SD</i>	1.13	2.26	1.12
BMI	<i>M</i>	25.74	26.46	26.66
	<i>SD</i>	6.46	4.98	5.55
Ethnicity %				
Caucasian		68	47.2	70.6
Asian		16	9.6	15.5
Latino-Canadian		4	3.2	3.6
African-Canadian		12	0	3.5
Other		0	6.8	6.8

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Table 3.

*Means, Standard Deviations, and Ranges of All Study 1 Variables*Binge Eater Group (N = 26)


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<u>Variable</u>	<i>Mean</i>	<i>SD</i>	<i>Range</i>
Number of cookies eaten	9.88	4.38	3-19
PANAS Negative Affect Score	16.04	5.98	10-29
POTS Weight Teasing Frequency	10.36	4.91	5-24
POTS Weight Teasing Effect	13.28	5.69	5-25
POTS Competency Teasing Frequency	15.12	4.75	9-25
POTS Competency Teasing Effect	15.88	5.93	7-26
Restraint Score	19.45	6.96	4-33
Identification Score	3.48	1.29	0-5

Nonbinge Eater Group (N = 62)


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<u>Variable</u>	<i>Mean</i>	<i>SD</i>	<i>Range</i>
Number of cookies eaten	6.37	2.98	3-15
PANAS Negative Affect Score	14.17	3.24	10-22
POTS Weight Teasing Frequency	8.36	3.84	5-23
POTS Weight Teasing Effect	10.59	5.79	5-25
POTS Competency Teasing Frequency	12.66	3.67	6-22
POTS Competency Teasing Effect	13.95	5.51	6-27
Restraint Score	16.64	5.78	2-28
Identification Score	3.61	1.35	0-5

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are positively skewed (Newton & Rudestam, 1999). Once this transformation was performed on the “number of cookies eaten” variable, the data more closely approximated a normal distribution and satisfied the analysis of variance assumption of a normal distribution. However, because of the nature of this particular variable (participants should not have eaten less than three cookies) this positively skewed distribution was anticipated. All analyses involving “number of cookies eaten” were performed using both the raw data and the transformed variable. Because results using both the raw and transformed data were consistent, the analyses using the untransformed data were reported for ease of comprehension of the results.

#### *Binge Scale*

The Binge Scale (BS) was scored by summing the responses to all 9 items of this scale. The Binge Scale is structured so that each response is give a numerical score, ranging from 0 to 4. Higher scores indicate more severe eating pathology. In the present study, the Binge Scale was primarily used to determine whether participants should be included in the binge or control group. Participants who scored either 3 or 4 on question 1 (binge frequency item) and scored 1 or 2 on questions 7 (loss of control item) were included in the binge eating group. All other participants served as the comparison group.

#### *PANAS*

The PANAS was scored by summing the responses to the ten positive affect items and the ten negative affect items separately. The mean of the positive affect subscale was 28.01 ( $SD = 6.22$ ), with scores ranging from 13-42 . Scores on the negative affect subscale ranged from 10-29, with a mean score of 14.67 ( $SD = 4.25$ ),

### *POTS*

The Perception of Teasing Scale was scored by summing the Competency Teasing and Weight Teasing subscales separately. The five Weight Teasing-Frequency items were added to derive this subscale score. The corresponding Weight Teasing-Effect items were also added to compute the Weight Teasing-Effect subscale. Subsequently, the Weight Teasing-Frequency and Effect subscale scores were added together to obtain an overall Weight Teasing Score. The same procedure was used to calculate the Competency Teasing score, using the six Competency Teasing items. The mean for the overall Weight Teasing score was 20.19 ( $SD = 9.5$ ) and the mean for the Competency Teasing score was 27.01 ( $SD = 8.47$ ).

### *Revised Restraint Scale*

The Revised Restraint Scale was scored by summing the first 10 items to obtain an overall restraint score. Items 11 and 12 are not included in the scoring of this measure. The overall mean of the Revised Restraint Scale was 17.48 ( $SD = 6.21$ ). Participants were classified as restrained eaters if their overall score was 15 or higher. Those who scored 14 and below were classified as unrestrained eaters. Twenty-six participants in this study were classified as unrestrained eaters and 61 participants were classified as restrained eaters. The high proportion of restrained eaters was likely due to the fact that this sample is comprised of 26 binge eaters who, as a group, tend to be restrained eaters (Fairburn & Wilson, 1993). Because there were no significant differences between experimental groups in terms of their restraint status, this variable was not included in any further analyses.

### *Manipulation Check*

A manipulation check was performed to determine whether participants complied with the instructions asking them to imagine themselves as the main character of the vignette while they were reading it. Descriptive information revealed that participants did appear to identify with the character in the vignette. The vignette identification questions ranged from “0” to “5,” with “0” indicating that the participant could not identify with the vignette character at all, and “5” being that the respondent could imagine being in the character’s situation completely. The overall mean for the vignette identification question was above the midpoint of the scale ( $M = 3.58$ ,  $SD = 1.34$ ), indicating that participants appeared to be able to identify with the main character and did comply with the directions to put themselves in her situation.

A 2 X 2 analysis of variance (ANOVA) revealed that there was a main effect of vignette on identification score  $F(1, 87) = 5.42$ ,  $p < .05$ . According to the cell means, this main effect indicated that participants identified more strongly with the neutral vignette ( $M = 3.90$ ,  $SD = 1.27$ ) than the teasing vignette ( $M = 3.16$ ,  $SD = 1.28$ ). However, there was no main effect for binge status on vignette identification score, nor was there significant interaction between binge status and vignette read on vignette identification. These results, as hoped, indicated that there were no systematic differences between groups with respect to their ability to identify with the main character.

### *Primary Analyses*

#### *Weight-Related Teasing*

A one-way analysis of variance (ANOVA) was conducted to determine if binge



eaters in this sample reported a more extensive history of weight-related teasing on the Perception of Teasing Scale. This analysis revealed a significant main effect of binge status (binge eater vs nonbinge eater) on weight-related teasing history,  $F(1, 87) = 4.07, p < .05$ . The cell means revealed that binge eaters reported being teased about their weight more frequently and were more affected by this teasing ( $M = 10.36, SD = 4.91$ ) as compared to nonbinge eating controls ( $M = 8.36, SD = 3.84$ ).

#### *The Effects of Weight-Related Teasing on Negative Mood*

A 2 X 2 between subjects factorial analysis of variance (ANOVA) with binge eating status (binge eaters vs nonbinge eaters) and vignette (weight-related teasing vs neutral) on negative mood revealed a significant main effect of vignette,  $F(1, 87) = 4.74, p < .05$ . The cell means revealed that participants who read the weight-related teasing vignette reported significantly more negative affect ( $M = 15.76, SD = 4.99$ ) than those who read the neutral vignette ( $M = 13.84, SD = 3.41$ ). However, there was no main effect for binge status on negative affect reported, nor was there significant interaction between binge status and vignette read on negative affect reported. The effect of weight-related teasing appeared to have had a similar impact on all participants, regardless of their binge eating status.

#### *The Effects of Weight-Related Teasing on Eating Behaviour*

A 2 X 2 between subjects factorial analysis of variance (ANOVA) with binge eating status (binge eaters vs nonbinge eaters) and vignette (weight-related teasing vs neutral) on number of cookies consumed revealed a significant main effect of binge status,  $F(1, 87) = 17.09, p < .001$ . The cell means revealed that binge eaters ate

significantly more cookies ( $M = 9.81, SD = 4.30$ ) than the nonbinge eaters ( $M = 6.37, SD = 2.98$ ). There was also a main effect for vignette read on the number of cookies eaten,  $F(1, 87) = 8.88, p < .01$ , with participants who read the weight-related teasing vignette eating significantly more cookies ( $M = 8.47, SD = 4.39$ ) than those who read the neutral vignette ( $M = 6.56, SD = 2.94$ ). These main effects were qualified by an interaction between binge status and vignette  $F(2, 87) = 6.85, p < .01$ , such that binge eaters ate significantly more cookies after reading the weight-related teasing vignette, as compared to all other groups<sup>1</sup> (see Figure 1). Moreover, approximately 70% of binge eaters in the weight-related teasing condition ate more cookies than participants in all other groups ( $U_3 = .56, U_3\% = 69.1$ )(Cooper, 1998, p. 130).

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<sup>1</sup>Because the distribution for the dependent variable “number of cookies eaten was not normally distributed, a logarithmic transformation was conducted and this transformed variable was used in this ANOVA. The results of the ANOVA for binge status and vignette with the transformed data for “number of cookies eaten” are as follows: main effect of binge status,  $F(1, 87) = 14.98, p < .01$ , ( $M = .94, SD = .21$  for binge eaters,  $M = .76, SD = .19$  for the comparison group); main effect of vignette read,  $F(1, 87) = 5.52, p < .05$ , ( $M = .86, SD = .23$  for teasing the vignette,  $M = .77, SD = .19$  for the neutral vignette); interaction between binge status and vignette,  $F(2, 87) = 4.32, p < .05$ .

Figure 1. *Interaction between Binge Status and Vignette Read on Number of Cookies Eaten*

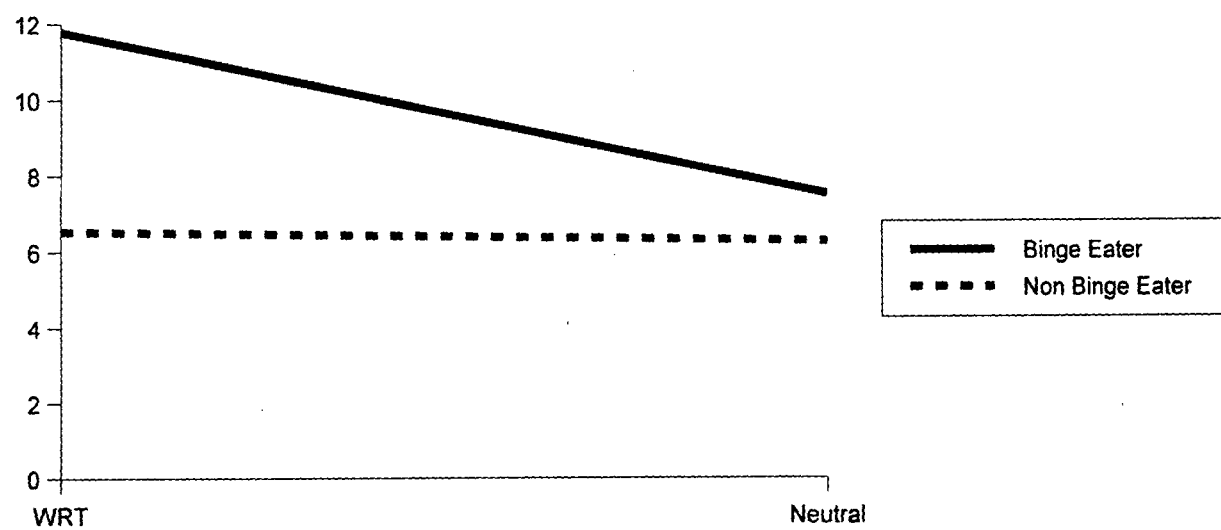


Table 4.

*Summary of Hypotheses, Statistical Procedures, and Results - Study 1*


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*Hypothesis 1* - Binge Eaters predicted to score higher on the weight-related teasing subscales of the Perception of Teasing Scale (POTS) as compared to nonbinge eaters.

*Statistical Procedure* - One-Way ANOVA.

Independent Variable: binge status (binge, nonbinge)

Dependent Variable: overall weight-related teasing score from POTS

*Results* - Significant main effect of binge status revealing that binge eaters reported being teased about their weight more frequently and were more affected by this teasing than nonbinge eaters.

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*Hypothesis 2* - Participants who read the weight-related teasing vignette would report higher levels of negative affect as compared to those who read the neutral vignette

*Statistical Procedure* - 2 X 2 ANOVA

Independent Variables: binge status (binge, nonbinge) and  
vignette (weight-related teasing, neutral)

Dependent Variable: negative mood as measured by PANAS

*Results* - Significant main effect of vignette revealing that participants who read the weight-related teasing vignette reported significantly more negative affect than the those who read the neutral vignette

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*Hypothesis 3* - Binge eaters would eat more than the nonbingeing comparison group.

Binge eaters who read the weight-related teasing vignette would eat more than binge eaters who read the neutral vignette and nonbinge eaters exposed with either vignette.

*Statistical Procedure* - 2 X 2 ANOVA

Independent Variables: binge status (binge, nonbinge) and  
vignette (weight-related teasing, neutral)

Dependent Variable: number of cookies eaten

*Results* - Significant main effect of binge status, revealing that binge eaters ate significantly more cookies than the nonbinge eaters.

Significant main effect of vignette with participants who read the weight-related teasing vignette eating significantly more cookies than those who read the neutral vignette.

Interaction between binge status and vignette, such that binge eaters ate significantly more cookies after reading the weight-related teasing vignette, as compared to all other groups

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### Discussion - Study 1

This study was designed to investigate the impact of weight-related teasing on eating and mood in binge eaters. Consistent with predictions, the results revealed that compared to nonbinge eaters, individuals who report binge eating at least once per week displayed higher scores on the weight-related teasing subscales of the Perception of Teasing Scale (POTS). The present findings are consistent with the research literature in this area indicating that binge eaters tend to report experiencing more weight-related teasing (Brown et al., 1989; Cash, 1995; Grilo et al., 1994). The present results also confirm that this particular sample of binge eaters meets the characteristics expected for the present study.

It was also hypothesized that compared to those who read the neutral vignette, participants who read the weight-related teasing vignette would report more negative affect. This hypothesis was verified. Reading the weight-related teasing vignette elicited more negative affect than reading the neutral vignette, indicating that this teasing vignette was a successful mood induction stimulus.

Finally, it was predicted that binge eaters who read the weight-related teasing vignette would eat more cookies than participants in all other groups. This hypothesis was supported. Binge eaters, when exposed to weight-related teasing, ate more cookies than binge eaters exposed to the neutral vignette and nonbinge eaters in both conditions. Thus, exposure to weight-related teasing was a trigger of increased food consumption in binge eaters, but not in nonbinge eaters.

The results of Study 1 can be summarized as follows. Participants who were

exposed to the weight-related teasing vignette, regardless of binge status, reported feeling more negative affect than those who read the neutral vignette. Further, binge eaters who read the weight-related teasing vignette ate significantly more cookies than participants in all other groups. Thus, weight-related teasing does induce negative affect, but negative affect translated into increased eating only for those who reported binge eating at least once a week. Although the nonbinge eaters also reported more negative affect after reading about weight-related teasing, they did not eat more in response to this negative affect.

#### *Future Research Directions*

Future research should further examine the construct of teasing in relation to binge eating. In the present study, both binge eaters and nonbinge eaters who were exposed to weight-related teasing reported more negative affect after exposure to it. However, it is possible that although the teasing vignette in this study dealt specifically with weight-related teasing, it may have been more representative of teasing experiences in general.

The results of Study 1 suggest that weight-related teasing does impact binge eaters. However, the specific impact of weight-related teasing on eating warrants further exploration. Thus, a second study was devised to address some of the limitations of Study 1. Study 2 was designed to evaluate the specific impact of weight-related teasing on eating and mood in binge eaters and a comparison group. It was impossible to determine from the results of Study 1 whether the impact of teasing on binge eaters was specifically due to the weight-related content. Thus, Study 2 expanded upon these findings with the addition of a third vignette, one describing teasing about academic performance.

*Limitations of Study 1*

In addition to being inconclusive as to the specific impact of weight-related teasing on mood and eating, Study 1 had several other limitations that were remedied in Study 2. One of these limitations was in the assignment of participants to the binge eating and comparison groups. In Study 1, participants were initially screened for binge eating using two questions, however, it was found that one of these screening questions was not specific enough to yield a predictable binge group. This question asked if participants had eaten what other people would regard as an unusually large amount of food given the circumstances any time in the past six months. Many participants who responded affirmatively to this question later indicated on the Binge Scale at time of participation that they had never had an episode of binge eating. Thus, many participants who were originally recruited for the binge eating group were actually nonbinge eaters. In order to remedy this limitation, a more specific initial screening question was used in Study 2.

On a related note, participants were assigned to the binge eater or comparison group on the basis of their responses to two items on the Binge Scale. While this method appeared to be successful in assigning binge eaters, there were some questions as to the composition of the comparison group. In Study 1, all participants who did not meet the criteria to be assigned to the binge eating group were placed in the nonbingeing group. However, this included participants who reported binge eating once or twice month, as well as those who had seldom or never binged. The inclusion of occasional binge eaters in the nonbingeing group created a less distinct comparison group. In retrospect, all participants who reported binge eating on a monthly basis could have been excluded



because they did not adequately fit the characteristics of either group. Study 2 remedied this limitation by excluding any participants who report binge eating occasionally (i.e. once or twice a month), thus resulting in more distinct binge eating and nonbinge eating groups.

Although the Binge Scale was an adequate tool for assigning participants to experimental groups, it did not provide a great deal of information regarding the eating habits and/or pathology of the participants. For instance, Study 1 was limited in its information about the number of binges participants experienced in the past month. Knowing more information about the sample, particularly the binge eaters, would certainly be of aid when generalizing results to an eating disordered population. Therefore, the addition of a more comprehensive eating pathology measure was recommended for Study 2.

Another limitation of Study 1 dealt with the possible contamination of the cover story. Because this research was conducted with a relatively small pool of potential participants over the period of one year, it is possible that the true purpose of the study may have been known to participants before the study. Although participants were asked during their debriefing not to talk to anyone else about the true purpose of the study, there were no measures assessing participants' prior knowledge of the study. This limitation is one that was only partially remedied in Study 2. Certainly, Study 2's addition of several post-experimental questions assessing the plausibility of the cover story and participants' prior knowledge of the study provided the researcher with more information. However, the possibility of participants discussing the cover story and the true nature of the study

with other potential participants remained a limitation.

## Introduction to Study 2

Weight-related teasing has been linked to body dissatisfaction and eating disturbances. Teasing about appearance and weight have been associated with higher levels of body dissatisfaction, eating disturbance, depression and lower self-esteem (Eisenberg et al., 2003; Fabian & Thompson, 1989). Some of Thompson's later work (Thompson, Coover et al., 1995) examined the relationships between teasing, weight status, body image and eating disturbance. Teasing was found to be significantly associated with both body dissatisfaction and eating disturbances. Brown, Cash, and Lewis (1989) found that females who engaged in the binge-purge cycle were more likely than controls to report being teased or rejected about their appearance. Overall, this line of research indicates that the perception of being teased about one's weight has a damaging impact on the victims.

To date, research on the association between teasing and eating disturbances has focused almost exclusively on weight and appearance teasing. Research has suggested that weight-related teasing is particularly memorable for those who have experienced it and that it does have a significant impact (Neumark-Sztainer et al., 2002). Intuitively, it makes sense that it is specifically the weight-related component of teasing that is emotionally evocative for binge eaters, given what is understood about the importance that these individuals place on appearance-related information (Heatherton & Baumeister, 1991). However, the specific impact of weight-related teasing on binge eaters has not been tested thus far. Gleason, Alexander and Somers (2000) found that university-aged females' self-esteem and body image were negatively correlated not only with a history of

appearance and weight-related teasing, but with competency teasing as well. These results suggest that an investigation into the specific impact of weight-related and competency teasing is warranted.

In comparison to the research examining the link between weight-related teasing, body dissatisfaction and eating disturbances as previously described, relatively little research has investigated the impact of teasing on self-esteem. Low self-esteem, itself, has been linked to eating disorders and is one of the risk factors most frequently reported to be associated with an increased risk of developing an eating disorder in prospective studies (Button et al., 1996; Cervera, et al., 2003). Low self-esteem is thought to result in body image dissatisfaction which, in turn, disposes individuals to be more vulnerable to accepting the thin ideal. It has been suggested that binge eaters, as a group, tend to have lower self-esteem since engaging in the binge cycle decreases levels of self-esteem with each successive binge episode (van den Berg et al., 2002).

With this research in mind, exploring the impact of teasing on self-esteem is particularly important for those who already suffer from eating disturbances, such as binge eaters. Gleason and colleagues (2000) found that females' self-esteem was significantly predicted by both appearance and competence teasing. Further, teasing witnessed by peers has been found to lower self-esteem and increase feelings of shame (Leary, Springer, Negel, Ansell, & Evans, 1998). Thus, teasing does appear to have some influence on self-esteem. Decreased self-esteem triggered by teasing may, in turn, increase binge eaters' susceptibility to binge eating. Furthermore, it has been hypothesized that because binge eaters tend to have a stronger than usual desire to be

perceived favourably by others (Heatherton & Baumeister, 1991), reading about teasing of any sort would likely trigger their desire to be perceived in a positive light, thus leading to lowered state self-esteem (i.e. feelings about the self that can be somewhat altered by moment-to-moment experiences), particularly in the realm of social evaluation. Therefore, self-esteem may play a crucial role in determining the impact of teasing on binge eaters.

The present study was designed to build upon previous findings, including the results of Study 1, by using teasing as a mood induction technique in a sample of binge eaters and nonbinge eaters. Based on the success of vicarious exposure to teasing via vignettes in Study 1, Study 2 employed the same strategy for the mood induction procedure, with the addition of a third, academic-related teasing vignette. The classic taste test format (Herman et al., 2003) was also used to determine the impact of weight-related teasing on mood and eating.

### *Study 2 Hypotheses*

Based on both previous research findings and the results of Study 1, three principal hypotheses were made.

1.) As in Study 1, it was predicted that binge eaters would have higher scores on the weight-related teasing subscales of the Perception of Teasing Scale (POTS), as compared to nonbinge eaters. Higher scores on this measure are indicative of a more extensive frequency and impact of weight-related teasing.

2.) Because the results of Study 1 indicated that reading about weight-related teasing increased negative mood in all participants, it was predicted that participants who

read the teasing vignettes would report higher levels of negative affect than would those who read the neutral vignette. Furthermore, it was also predicted that there would be an interaction between binge status (binge eater, nonbinge eater) and the vignette read (weight-related teasing, academic-related teasing, neutral). Because weight-related information is particularly sensitive for binge eaters, it was expected that binge eaters who read the weight-related teasing vignette would experience more negative affect than binge eaters who read the academic-related teasing and neutral vignettes.

3.) With respect to food consumption/eating, it was predicted that, overall, binge eaters would eat more than the nonbinge eating comparison group. It was also predicted that there would be an interaction between binge status (binge eater, nonbinge eater) and the vignette read (weight-related teasing, academic-related teasing, neutral). Binge eaters who read the weight-related teasing vignette were expected to eat more than binge eaters who read the academic-related teasing and neutral vignettes. Nonbinge eaters' eating behaviour was not expected to differ in either teasing conditions or in the control condition.

In addition to these three principal hypotheses, Study 2 also sought to investigate the impact of teasing on participants' levels of state self-esteem. Therefore it was predicted that binge eaters would have overall lower levels of state self-esteem than their nonebingeing counterparts. Further, it was also predicted that there would be an interaction between binge status (binge eater, nonbinge eater) and vignette read (weight-related teasing, academic-related teasing, neutral) on some of the subscales of the State Self Esteem Scale.

Specifically, an interaction between binge status and vignette read was predicted for both the Social Evaluation subscale and the Appearance subscale of the State Self-Esteem Scale. It was expected that binge eaters who read either teasing vignette would report lower levels of state self-esteem on the Social evaluation Subscale. It was also predicted that there would be an interaction between binge status and vignette on the Appearance subscale. Based on the binge eaters' particularly strong investment in the thin ideal and their aforementioned desire to be perceived favourably by others, it was expected that binge eaters who read the weight-related teasing vignette would report lower levels of appearance related state self-esteem as compared to binge eaters in the other two conditions and compared to all nonbinge eaters.

## Method - Study 2

### *Participants*

In order to more systematically determine the needed sample size for Study 2, a power analysis using the computer program G-POWER was conducted. This analysis was conducted estimating an effect size of .75, at the .05 significance level. The result of this power analysis indicated that 108 participants were needed to achieve statistical power of .8, as is suggested by Cohen (1996) . These results suggest that in order to achieve adequate power to obtain statistical significance for Study 2, a minimum of 18 participants were needed in each of the six conditions.

One-hundred and twenty-one females enrolled in undergraduate psychology courses at the University of Windsor participated in the study. All participants were recruited through the psychology participant pool and received course credit for taking part in the study. The study was conducted over three academic semesters, beginning in June 2004 (see Table 5 for characteristics of the participant pool sample). All participants who took part in Study 1 were excluded from Study 2.

Psychology students enrolled in the participant pool were asked to respond to several screening questions. The two screening questions used in this study were as follows: (1) "During the last 6 months, have there been times when you felt you have eaten what other people would regard as an unusually large amount of food given the circumstances (e.g. a quart of ice cream) at least once per week?" YES or NO, and (2) "During the times when you ate an unusually large amount of food, did you experience a



Table 5.

*Characteristics of Psychology Participant Pool by Semester of Testing - Study 2*

## Spring 2004

Total number of students enrolled in participant pool	362
Number of females enrolled in participant pool	289
Number of females answering "YES" to binge screening questions	16
Number of females answering "NO" to binge screening questions	273
Number of "YES" females supplied by participant pool	13
Number of "NO" females supplied by participant pool	10
Binge eaters who took part in study	8
Nonbinge eaters who took part in study	2

\* Remaining 13 females whose names were supplied by the participant pool either could not be contacted, were not interested in participating or had already earned all possible bonus points.

## Summer 2004

Total number of students enrolled in participant pool	252
Number of females enrolled in participant pool	211
Total number of student answering "YES" to binge screening questions	29
Number of females answering "YES" to binge screening questions	25
Number of females answering "NO" to binge screening questions	186
Number of "YES" females supplied by participant pool	20
Number of "NO" females supplied by participant pool	18

Binge eaters who took part in study	8
Nonbinge eaters who took part in study	12

\* Remaining 18 females whose names were supplied by the participant pool either could not be contacted, were not interested in participating or had already earned all possible bonus points.

#### Fall 2004

Total number of students enrolled in participant pool	1691
Number of females enrolled in participant pool	1390
Total number of student answering "YES" to binge screening questions	122
Number of females answering "YES" to binge screening questions	111
Number of females answering "NO" to binge screening questions	1279
Number of "YES" females supplied by participant pool	103
Number of "NO" females supplied by participant pool	50
Binge eaters who took part in study	41
Nonbinge eaters who took part in study	50

\* Remaining 62 females whose names were supplied by the participant pool either could not be contacted, were not interested in participating or had already earned all possible bonus points.

loss of control (feel that you couldn't stop eating or control what or how much you were eating)?" YES or NO.

Lists of potential participants were generated by the psychology participant pool staff on the basis of students' responses to the above two screening questions. Random lists of females who responded affirmatively to both screening questions were generated (typically 20 names per list), as were random lists of females who responded negatively to both screening questions. Potential participants' responses to these initial screening questions did not result in assignment to the comparison or binge eating group. Rather these questions served as screening measure to help the investigator more effectively target the desired group (binge eaters). Binge group assignment was based on participants' responses to two specific questions on the Binge Scale. Participants who reported binge eating "at least once or twice a week" or more, and reported feeling at least "somewhat out of control" on the Binge Scale were assigned to the binge eating group. The comparison group was comprised of individuals who indicated that they had "never" or "seldom" engaged in binge eating and did not experience loss of control over their eating.

Once participants' binge eating symptoms were determined, 57 participants met the criteria for the binge eating group, and the remaining 57 participants were placed in the comparison group. In order to retain the integrity of the comparison group, 7 participants were excluded from the study because they reported binge eating "once or twice a month". These 7 participants did not meet the criteria to be included in the binge eating group but binged too frequently to be considered "control" participants.

Participants were given final binge group assignment (binge eater or nonbinge eater) once they had completed all study questionnaires.

### *Materials*

#### *Food Stimuli*

Three flavors of chocolate candies - M&M's, Smarties, and Reese's Pieces - were used as the food stimuli in this study. Each bowl presented to participants contained 150 candies, for a total of 450 candies presented to each participant. Each bowl of candies was counted and weighed with a standard digital postal scale both before and after being presented to the participant.

Although using cookies produced a successful experimental manipulation in Study 1, they were also a very onerous dependent variable to produce. Previous research has demonstrated that M&M's are effective stimuli in eating studies (Cavallo & Pinto, 2001). Binge eaters tend to select foods high in sugar, and/or carbohydrates for their binge episodes, with a particular preference for chocolate (Anderson, Williamson, Johnson, & Grieve, 2001). Thus, in order to demonstrate that the effect of the manipulation was not restricted only to cookies but would also be seen using another type of palatable food, M&M's, Smarties and Reese's Pieces were used in Study 2.

#### *Social Interaction Vignettes*

Three social interaction vignettes were constructed: one describing a female who experiences teasing on account of her weight, one describing a female who is teased about her academic performance, and one parallel neutral vignette that did not include any teasing content. The weight-related teasing and the neutral vignettes that were used in

Study 1 were also used in Study 2. The academic-related teasing vignette was created specifically for Study 2. An attempt was made to create realistic social interactions involving peer teasing. The weight-related and academic-related teasing vignettes included components of the weight-related teasing and competency teasing subscales of the Perception of Teasing Scale, respectively (Thompson, Cattarin et al., 1995). See Appendix Q for vignettes.

### *Study 1 Measures*

Participants completed the same questionnaire package as was completed in Study 1. The questionnaires included the Positive and Negative Affect Schedule, the Binge Scale, the Perception of Teasing Scale, the Revised Restraint Scale, and the State Self-Esteem Scale (see Appendices C through G, respectively). Participants' Body Mass Index was also obtained by measuring participants' height and weight. In addition to the measures used in Study 1, participants in Study 2 also completed the Eating Disorders Examination-Questionnaire (Fairburn & Beglin, 1994).

### *Eating Disorder Examination—Questionnaire (EDE-Q)*

The EDE-Q was added to Study 2 in order to provide a more comprehensive picture of participants' eating pathology. More specifically, this questionnaire asks participants to estimate the number of binge episodes in the last four weeks. This is a self-report measure of eating disorder psychopathology based on the eating disorder examination (Fairburn & Beglin, 1994; Fairburn & Cooper, 1993). Like the EDE interview, this questionnaire focuses on participants' state over the preceding 28 days. It assesses the main behavioural features of eating disorders (e.g., dietary restriction,

episodes of binge eating, vomiting) and generates four subscales that assess dietary restraint, eating concern, shape concern and weight concern. It uses a seven-point forced-choice rating scheme for these subscales. Frequencies of key eating disorder behaviours are measured in terms of the number of days on which each particular form of behaviour occurs. Cronbach's alpha co-efficients for the four subscales ranged from 0.78-0.93, and Pearson co-efficient correlations for the reliability ranged from 0.81-0.94 across the subscales (Luce & Crowther, 1999). See Appendix R for the EDE-Q.

### *Procedure*

Upon being contacted, participants were asked to participate in a taste test study investigating the effects of recalling certain memories on taste ratings (see Appendix H for contact script). This cover story was used to mask the true purpose of the study. Participants were instructed to eat a moderate amount of food between one and three hours before their appointment, to help assure some uniformity and a relatively neutral state of hunger. As well, participants were asked at the time of initial contact if they had allergies to either chocolate or peanut butter.

All participants were run individually by the same investigator, a doctoral candidate in clinical psychology between the hours of 12 and 6 p.m., as is standard procedure in "taste test" style eating studies (McFarlane et al., 1998). Upon arrival in the lab, participants were asked to read and sign the consent form (Appendix S) and were given a copy of the letter of information (Appendix T) for their records. Participants were reminded that the purpose of the study was to investigate the manner in which memories affect taste perception. They were also informed that they would be taste-testing three

kinds of candy. After consenting to participate, participants were randomly assigned to the weight-related teasing, academic-related teasing, or neutral condition, and were given the corresponding vignette to read. Participants were instructed to read the vignette carefully and were asked to identify with the character in the vignette as much as possible (see Appendix U for complete study instructions). At this time, the investigator left the room to allow the participants to read the vignettes in private. As a manipulation check, after reading the vignette, the participants were asked to rate how strongly they identified with the main character in the vignette (see Appendix L).

Following reading the vignette, participants were told that the experimenter was not quite finished getting the candies ready for the taste test and they were asked whether they would mind completing a questionnaire for another student doing a study while they waited for the candies. At this time, the PANAS was administered, along with several demographic questions (Appendix M). The cover story at this point was intended to mask the importance of the mood variable to control for possible expectancy effects.

Once these two questionnaires were completed, the experimenter reentered the room, this time carrying a tray with the three bowls of candies and a glass of water. Participants were given the candy taste rating form (Appendix V) and were informed they would be sampling three flavours of candies. The candies were presented to the participant as either candy “A,” “B,” or “C”, the order of which was randomly determined. Each small bowl contained 150 candies. Each bowl of candies was weighed before and after being presented to the participant.

Participants were given the entire instructions for the taste test before being left

alone in the room to complete this phase of the study. Participants were instructed to begin by taking a sip of water to cleanse their palate and then to begin testing candy “A.” They were instructed to eat as many of these candies as necessary to complete their ratings. Participants were told that once they were satisfied with their ratings of candy “A,” they were to proceed to candy “B,” following the same protocol as they had for candy “A.” Participants were asked that once they had moved on to candy “B,” they were not to go back and change their ratings of candy “A.” Participants were told that once candy “B” was rated, they should take another sip of water and continue on to candy “C.” After these instructions, the experimenter left the room to avoid any social influence, informing the participants on the way out that she would return in approximately ten minutes and that once they had completed their ratings they should feel free to help themselves to the candies as there were “plenty” left.

Following the taste-test period which lasted exactly 10 minutes, as is standard procedure in “taste test studies” (McFarlane et al., 1998), the experimenter removed the three bowls of candies and asked the participants to complete some additional questionnaires. Participants completed, in random order: the Binge Scale, the Perception of Teasing Scale, the Revised Restraint Scale, the Eating Disorders Examination-Questionnaire, and the State Self-Esteem Scale. During this time, the candies were weighed and counted to determine the participants’ consumption.

Once the questionnaires were completed, participants were debriefed (Appendix W) and the true purpose of the study was explained in detail. Participants were encouraged to express any thoughts or feelings they had about the study. At this point,



participants were given the option to have their data removed from the study. All participants agreed to allow their data to stand and to be part of the study's database. Following debriefing, participants were asked to complete several post-experimental questions to determine the credibility of the cover story as well as any additional thoughts the participants has about the study (see Appendix X).

Once the debriefing and post-experiment questions were complete, participants were asked if they would mind having their height and weight measured to obtain a measure of Body Mass Index (BMI). Participants were made aware of the importance of having accurate measures of height and weight for the study. Those who agreed to participate in this portion of the study were asked to sign an additional consent statement (Appendix P) indicating that they agreed to this procedure since it was not covered in the original consent form. Of the total 121 participants who took part in this study, only two declined to be weighed. Finally, participants were given a list of psychological resources in the event that they experienced any negative affect or incidents that they wished to discuss with a professional.

This study has been reviewed and received ethics clearance through the University of Windsor Research Ethics Board.

### *Experimental Design*

Study 2 used a 2 X 3 factorial design. The two primary independent variables explored in this study were binge status (binge eater, nonbinge eater) and vignette (weight-related teasing, academic-related teasing, neutral). The primary dependent variables were: weight-related teasing history, negative affect reported, and number of

candies consumed.

## Results - Study 2

### *Approach to Data Analysis*

All analyses were performed using SPSS for Windows, Version 12.0. Descriptive analyses were performed on all variables included in the present study. Following descriptive analyses, a manipulation check was performed as well as several analyses of variance (ANOVAs) designed to investigate participants' teasing history and the effect of the experimental manipulation on negative affect and eating. The criterion for statistical significance employed in all analyses was the .05 level.

### *Descriptive Information and Scoring of the Measures*

Demographic information for binge eaters, nonbinge eaters and the entire sample combined is presented in Table 6. Descriptive statistics for all variables in Study 2 are displayed for binge eaters and nonbinge eaters, respectively, in Tables 7 and 8.

### *Eating Behaviour*

Eating was quantified by counting the total number of candies each participant consumed during the mock taste test portion of the study. Although both weight and number of candies were recorded, it was determined that number of candies was a more reliable measure of eating. The three different types of candies weighed different amounts and recording the weight of the candies only did not reflect the actual behavioural action of eating candy after candy, particularly when a participant demonstrated preference for eating many more of the candy that weighed the least (Reese's Pieces).

The overall mean number of candies consumed was 41.89 ( $SD = 22.36$ ), with a range of 6-110 candies eaten. Prior to conducting further analyses, the "number of

Table 6.

*Demographic Information for Binge Eaters and Nonbinge Eaters - Study 2*

<u>Variables</u>	<u>Binge Eaters (n = 57)</u>		<u>Nonbinge Eaters (n = 57)</u>	<u>Total (n= 114)</u>
Age	<i>M</i>	22.93	22.14	22.53
	<i>SD</i>	6.87	4.79	5.90
Year of University	<i>M</i>	2.21	2.73	2.47
	<i>SD</i>	1.19	1.07	5.90
BMI	<i>M</i>	25.92	25.10	25.51
	<i>SD</i>	5.42	4.73	5.08
Ethnicity %				
Caucasian		78.9	70.3	76.6
Asian		8.8	5.3	9.9
African-Canadian		5.3	12.3	9.0
Arabic		3.5	3.5	3.6
Other		3.5	8.6	.9

Table 7.

*Means, Standard Deviations, and Ranges of All Variables for Binge Eater Group (N= 57)*

<u>Variable</u>	<i>Mean</i>	<i>SD</i>	<i>Range</i>
Number of Binges in past 28 days	7.49	7.07	2-28
Number of candies eaten	50.15	22.34	8-110
PANAS Negative Affect Score	16.58	5.97	10-32
POTS Weight Teasing Frequency	8.26	3.41	5-16
POTS Weight Teasing Effect	11.54	6.04	5-25
POTS Competency Teasing Frequency	14.88	5.29	7-25
POTS Competency Teasing Effect	16.77	3.41	6-27
Restraint Score	21.00	5.25	6-30
SSES Academic Performance	22.73	5.07	10-34
SSES Social Evaluation	19.29	5.37	9-35
SSES Appearance	15.02	4.09	6-25
Identification Score	3.24	1.42	0-5

Table 8.

*Means, Standard Deviations, and Ranges of All Variables for Nonbinge Eater Group (N=57)*

<u>Variable</u>	<i>Mean</i>	<i>SD</i>	<i>Range</i>
Number of Binges in past 28 days	.40	.82	0-3
Number of candies eaten	33.62	19.25	6-97
PANAS Negative Affect Score	14.74	5.15	10-32
POTS Weight Teasing Frequency	7.50	3.58	5-19
POTS Weight Teasing Effect	9.14	5.66	5-25
POTS Competency Teasing Frequency	13.47	4.63	7-25
POTS Competency Teasing Effect	14.80	6.13	6-30
Restraint Score	13.26	6.41	0-30
SSES Academic Performance	25.02	4.85	15-33
SSES Social Evaluation	22.91	5.58	9-35
SSES Appearance	22.91	4.45	6-29
Identification Score	3.17	1.45	0-5

candies eaten” was assessed using a Q-Q plot, a histogram, and the Kolmogorov-Smirnov (KS) statistic. A visual inspection of the Q-Q plots and the histograms revealed that this dependent variable was normally distributed. Similarly, the Kolmogorov-Smirnov statistic also indicated that the distribution of scores for this variable was within a normal range (Field, 2000).

### *Binge Scale*

The Binge Scale (BS) was scored by summing the responses to all 9 items of this scale. The Binge Scale is structured so that each response is given a numerical score, ranging from 0 to 4. Higher scores indicate more severe eating pathology. In the present study, the Binge Scale was primarily used to determine whether participants should be included in the binge or the nonbinge group. Participants who scored either 3 or 4 on question 1 (binge frequency item) and scored 1 or 2 on questions 7 (loss of control item) were included in the binge eating group, resulting in 57 participants. The seven participants who scored 2 on question 1, indicating that they binge eating “once or twice a month” were excluded from the data analyses. The other 57 participants served as the comparison group.

### *PANAS*

The Positive and Negative Affect Schedule (PANAS) was scored by summing the responses to the ten positive affect items and the ten negative affect items separately. The overall mean of the positive affect subscale was 29.06 ( $SD = 6.78$ ), with scores ranging from 12-46. The overall mean of the negative affect subscale was 15.66 ( $SD = 5.63$ ), with scores ranging from 10-41.

### *POTS*

The Perception of Teasing Scale (POTS) was scored by summing the Competency Teasing and Weight Teasing subscales separately. The five Weight Teasing-Frequency items were added to derive this subscale score. The corresponding Weight Teasing-Effect items were also added to compute the Weight Teasing-Effect subscale. Subsequently, the Weight Teasing Frequency and Effect subscale scores were added together to obtain an overall Weight Teasing Score. The same procedure was used to calculate the Competency Teasing score, using the six Competency Teasing items.

### *Revised Restraint Scale*

The Revised Restraint Scale was scored by summing items 1-9 and 11 to obtain an overall restraint score. Items 10 and 12 are not included in the scoring of this measure. Participants were classified as restrained eaters if their overall score was 15 or above. Those who scored 14 and below were classified as unrestrained eaters. Thirty-eight participants in this study were classified as unrestrained eaters and 76 participants were classified as restrained eaters. The high proportion of restrained eaters is likely due to the fact that this sample was comprised of 57 binge eaters who, as a group, tend to be restrained eaters (Fairburn & Wilson, 1993). Because there were no significant differences between experimental groups in terms of their restraint status, this variable was not included in any further analyses.

### *SSES*

Before scoring the State Self-Esteem Scale, 12 items are reverse scored (items 2, 4, 5, 7, 8, 10, 13, 15, 16, 18, 19, and 20). After items are reversed scored, the overall



SSES score was calculated by summing all 20 items. The Appearance, Academic Performance, and Social Evaluation subscales were calculated by summing the respective items together. The overall mean of the total score for the SSES was 61.94 ( $SD = 12.71$ ), while the means of the Appearance, Academic Performance, and Social Evaluation subscales were 16.96 ( $SD = 4.63$ ), 23.88 ( $SD = 5.07$ ), and 21.11 ( $SD = 5.75$ ), respectively.

#### *Semester of Participation*

In order to be assured that there were no differences in the effect of the experimental manipulation based on the semester in which participants were tested, a one-way analysis of variance of semester (spring, summer or fall) on number of candies consumed was conducted. The results of this analysis indicated that there were no significant differences in amount eaten between participants in each of the three semesters ( $F(1, 113) = 1.79, p = .17$ ). Because of this nonsignificant result, this variable was not further addressed in the study.

#### *Time of Participation*

The potential impact of the time of day when the participant was tested was also evaluated using a one-way ANOVA with time of day (12:00, 1:00, 2:00, 3:00, 4:00 or 5:00) as the independent variable and the number of grams of candy eaten served as the dependent variable. This analysis revealed that there was no significant difference between participants' candy consumption based on the time of day they participated ( $F(1, 113) = 1.24, p = .30$ ).

#### *Credibility of Cover Story*

The credibility of the cover story was assessed via the post-experimental

questions. When responding to these questions, all participants were able to correctly describe the cover story presented at the outset of the study. As well, all participants reported that they believed the cover story, indicating that, at the time of the manipulation, the cover story was credible and intact. However, approximately 86% of participants indicated on the post-experiment questionnaire that they began to doubt the cover story at some point during the study. Of these 104 participants who had doubts about the cover story, 103 reported that they began questioning the cover story while they were answering the questionnaires following the taste test.

These data indicated that even though most participants did doubt the cover story by the end of the study, it was only after the experimental manipulation was complete that their doubts occurred. Most participants indicated that the presence of several questionnaires about eating habits and patterns in the final phase of the study caused them to wonder if there was more to the study than they were originally told. At this stage of the study, it was less crucial to the experiment that participants be unaware that this study was investigating eating patterns, as the manipulation was complete. Based on this information, it was determined that the cover story was credible for the period where it was most necessary, during the experimental manipulation.

According to their responses to the post-experimental questions, no participants indicated that they had heard about the study prior to being contacted. When explicitly asked, all but two participants agreed not to discuss the true purpose of the study with others to help the experimenter preserve the integrity of the cover story and manipulation.

### *Identification with Protagonist*

An additional manipulation check was performed to determine whether participants were able to imagine themselves as the main character of the vignette while they were reading it. Descriptive information revealed that participants did appear to identify with the character in the vignette. The vignette identification question ranged from “0” to “5,” with “0” indicating that the participant could not identify with the vignette character at all, and “5” being that the respondent could imagine being in the character’s situation completely. The overall mean for the vignette identification question was above the midpoint of the scale ( $M = 3.21$ ,  $SD = 1.43$ ), indicating that participants appeared to be able to identify with the main character and did comply with the directions to put themselves in her situation.

A 2 X 3 analysis of variance (ANOVA) revealed that there was a main effect of vignette on identification score,  $F(1, 113) = 4.56$ ,  $p < .05$  (see Table 9 for distribution of scores). According to the cell means, this main effect indicated that participants identified more strongly with the neutral vignette ( $M = 3.76$ ,  $SD = 1.38$ ), followed by the weight-related teasing vignette ( $M = 2.97$ ,  $SD = 1.37$ ) and then the academic-related teasing vignette ( $M = 2.88$ ,  $SD = 1.40$ ). However, there was no main effect for binge status on vignette identification score, nor was there a significant interaction between binge status and vignette read on identification. These results, as hoped, indicated that there were no systematic differences between groups with respect to their ability to identify with the protagonist of the three vignettes.

Table 9.

*Frequency of Identification Scores by Vignette Read (N = 114)*


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<u>Identification Score</u>	<u>Neutral</u>	<u>Weight Teasing</u>	<u>Academic Teasing</u>
0	1	3	1
1	3	3	6
2	3	5	9
3	4	11	4
4	13	13	13
5	14	3	4

---

## *Primary Analyses*

### *Teasing History*

A one-way multivariate analysis of variance (MANOVA) of binge status on the four subscales of the POTS was conducted to determine if there were differences in teasing history and impact of teasing between binge eaters and the comparison group. This analysis revealed a significant main effect of binge status (binge eaters vs nonbinge eaters) on the impact of weight-related teasing,  $F(1, 113) = 4.81, p < .05$ . The cell means revealed that binge eaters reported being more upset by being teased about their weight ( $M = 11.54, SD = 6.04$ ) as compared to nonbinge eating controls ( $M = 9.14, SD = 5.66$ ). There were no significant differences between binge eaters and nonbinge eaters in the frequency of teasing about weight. The difference between the impact of academic-related teasing between binge eaters and the comparison group approached significance ( $F(1, 113) = 3.36, p = .069$ ), again with binge eaters indicating that they were more upset by being teased about their abilities than were nonbinge eaters, although this difference was not statistically significant.

### *The Effects of Teasing on Negative Mood*

A 2 X 3 analysis of variance (ANOVA) with binge eating status (binge eaters or nonbinge eaters) and vignette (weight-related teasing, competence-related teasing, or neutral) on negative mood revealed a significant main effect of vignette,  $F(1, 113) = 3.15, p < .05$ . However, there was no significant main effect of binge status on negative affect ( $F(1, 113) = 3.19, p = .08$ ), nor was there an interaction between binge status and vignette read ( $F(2, 113) = .39, p = .68$ ). The vignettes appeared to have had a similar

impact on all participants, regardless of their binge eating status.

Post hoc analyses were conducted to determine the specific effect of each of the vignettes on negative affect. Tukey's HSD revealed significant mean differences between the neutral and weight-related teasing vignettes ( $p < .05$ ) and the between the neutral and the academic-related teasing vignettes ( $p < .05$ ). Participants who read the weight-related teasing vignette reported significantly more negative affect than those who read the neutral vignette. Those who read the academic-related vignette also reported significantly more negative affect than those in the neutral condition. The difference in negative affect between the academic-related and weight-related vignettes was not significant. See Table 10 for cell means.

#### *The Effects of Teasing on Eating Behaviour*

A 2 X 3 analysis of variance (ANOVA) with binge eating status (binge eaters, nonbinge eaters) and vignette (weight-related teasing, academic-related teasing, neutral) on number of candies consumed revealed a significant main effect of binge status,  $F(1, 113) = 18.83, p < .001$ . The cell means revealed that binge eaters ate significantly more candy than the nonbinge eaters (see Table 11 for cell means and standard deviations). Cohen's  $U_3$  statistic revealed that nearly 80% of binge eaters ate more candy than the typical nonbinge eater ( $U_3 = .81$ ).

In addition, there was also a main effect of vignette read,  $F(1, 113) = 3.22, p < .05$ , indicating that those who read the weight-related teasing vignette ate more candy overall (see Table 12 for cell means and standard deviations). Post hoc analyses were conducted to determine the specific effect of each of the vignettes on number of candies

Table 10.

*Negative Affect Score as a Function of Vignette Read*


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<u>Nonbinge Eater Group (N = 57)</u>			
	<i>Mean</i>	<i>SD</i>	<i>N</i>
Neutral Vignette	12.58	2.87	19
Weight-Related Teasing Vignette	15.89	5.35	19
Academic-Related Teasing Vignette	15.74	6.20	19

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<u>Binge Eater Group (N = 57)</u>			
	<i>Mean</i>	<i>SD</i>	<i>N</i>
Neutral Vignette	14.37	2.97	19
Weight-Related Teasing Vignette	18.16	6.62	19
Academic-Related Teasing Vignette	16.31	6.72	19

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<u>Overall Model (N = 114)</u>			
	<i>Mean</i>	<i>SD</i>	<i>N</i>
Neutral Vignette	13.47	3.02	38
Weight-Related Teasing Vignette	17.03	6.05	38
Academic-Related Teasing Vignette	16.03	6.38	38

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Table 11.

*Main Effect of Binge Status on Number of Candies Eaten (N = 114)*

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<i>Binge Status</i>	<i>M</i>	<i>SD</i>
Binge Eaters	50.15	22.34
Nonbinge Eaters	33.69	19.25

---



Table 12.

*Main Effect of Vignette on Number of Candies Eaten (N = 114)*

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<i>Vignette</i>	<i>M</i>	<i>SD</i>
Neutral	37.36	19.32
Weight-Related Teasing	48.58	24.08
Academic-Related Teasing	41.89	22.36

---

eaten. Tukey's HSD revealed that the only significant mean difference between vignettes was between the neutral and weight-related teasing vignettes ( $HSD = -11.22, p < .05$ ). Participants who read the weight-related teasing vignette ate significantly more candy than those who read the neutral vignette. The difference in amount eaten between the academic-related and weight-related vignettes was not significant, nor was the difference between the academic-related and neutral vignettes.

It was initially predicted that there would be a significant interaction between binge status and vignette read, as was found in Study 1. However, the overall interaction between binge status and vignette on number of candies eaten was not significant. In cases where a specific prediction about an interaction is made, Cohen (2001) suggests that simple main effects must be calculated, even when the overall interaction is nonsignificant. In this case, these simple effects were examined using three independent samples t-tests for binge eaters and nonbinge eaters separately. The three t-tests were as follows: 1) the amount eaten in the weight-related teasing condition compared to the neutral condition, 2) the amount eaten in the weight-related teasing condition compared to the academic-related teasing condition, and 3) the amount eaten in the academic-related teasing condition compared to the neutral condition.

*Weight-Related Teasing vs. Neutral (Binge Eaters Only):* This t-test indicated that there was a significant difference in the amount eaten between binge eaters who read the weight-related teasing vignette and binge eaters who read the neutral vignette ( $t(36) = -2.92, p < .05$ ). Binge eaters in the weight-related teasing condition ate significantly more candy than binge eaters in the neutral condition (see Table 13 for cell means of all

Table 13.

*Total Number of Candies Eaten as a Function of Vignette Read*Nonninge Eater Group (N = 57)

	<i>Mean</i>	<i>SD</i>	<i>N</i>
Neutral Vignette	32.75	17.16	19
Weight-Related Teasing Vignette	35.63	20.31	19
Academic-Related Teasing Vignette	32.48	20.97	19

Binge Eater Group (N = 57)

	<i>Mean</i>	<i>SD</i>	<i>N</i>
Neutral Vignette	41.97	20.68	19
Weight-Related Teasing Vignette	61.95	20.63	19
Academic-Related Teasing Vignette	46.95	21.94	19

groups). Further, more than 81% of binge eaters in the weight-related teasing condition ate more than the average binge eater in the neutral condition ( $U_3 = .97$ ).

*Weight-Related Teasing vs. Academic-Related Teasing (Binge Eaters Only):*

Approximately 76% of binge eaters in the weight-related teasing condition ate more than the average binge eater in the academic-related condition. Results of the t-test revealed that there was a significant difference in amount eaten between binge eaters who read the weight-related teasing vignette and the academic-related vignette ( $t(36) = 2.11, p < .05$ ). See Table 13 for cell means.

*Academic-Related Teasing vs. Neutral (Binge Eaters Only):* This t-test indicated that there was no significant difference between the amount eaten by binge eaters in these two conditions. See Table 13 for cell means.

There were no corresponding effects of the vignettes for the nonbinge eating group for any of the three independent samples t-tests described above ( $p$  values ranged from .476 to .641). These results indicate that binge eaters who read the weight-related vignette ate significantly more candy than binge eaters in the other two experimental groups and that this effect of vignette is specific to binge eaters.

*State Self-Esteem*

A 2 X 3 multivariate analysis of variance (MANOVA) with binge status (binge eaters or nonbinge eaters) and vignette (weight-related teasing, academic-related teasing, or neutral) was conducted on the 4 subscales of the State Self-Esteem Scale. This analysis revealed a main effect of binge status on each of the subscales of the SSES, with binge eaters demonstrating lower levels of self-esteem on all four of these sub-scales. Table 14

provides the exact values calculated in this analysis, as well as the mean self-esteem scores for binge eaters and nonbinge eaters. There was no significant main effect of vignette read on any of the subscales of the SSES. Finally, there was an interaction between binge status and vignette on the social evaluation subscale only of the SSES,  $F(2, 113) = 3.63, p < .05$ . The cell means indicated that binge eaters who read the weight-related teasing vignette displayed the lowest levels of state self-esteem of all six groups. Table 15 provides the cell means for each group.

Table 14.

*State Self-Esteem Scores as a Function of Binge Status (N = 114)*


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	<i>df</i>	<i>F</i>	<i>p</i>	<i>Nonbinge</i>	<i>Binge</i>
SSES Total Score	(1, 113)	20.21	<..001	<i>M</i> = 66.82 ( <i>SD</i> = 12.30)	<i>M</i> = 57.05 ( <i>SD</i> = 11.22)
Academic Performance	(1, 113)	6.06	<.05	<i>M</i> = 25.02 ( <i>SD</i> = 4.85)	<i>M</i> = 22.74 ( <i>SD</i> = 5.08)
Appearance	(1, 113)	23.88	<.001	<i>M</i> = 18.89 ( <i>SD</i> = 4.35)	<i>M</i> = 15.02 ( <i>SD</i> = 4.09)
Social Evaluation	(1, 113)	20.23	<.001	<i>M</i> = 22.91 ( <i>SD</i> = 5.58)	<i>M</i> = 19.30 ( <i>SD</i> = 5.37)

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Table 15.

*State Self-Esteem Social Evaluation as a Function of Binge Status and Vignette Read**(N = 114)*

<hr/>			
Nonbinge eaters			
	<i>Mean</i>	<i>SD</i>	<i>N</i>
Neutral Vignette	25.53	4.83	19
Weight-Related Teasing Vignette	20.68	5.01	19
Academic-Related Teasing Vignette	22.52	5.98	19
<hr/>			
Binge Eaters			
	<i>Mean</i>	<i>SD</i>	<i>N</i>
Neutral Vignette	18.31	4.76	19
Weight-Related Teasing Vignette	18.21	4.49	19
Academic-Related Teasing Vignette	21.36	6.31	19
<hr/>			

Table 16.

*Summary of Hypotheses, Statistical Procedures, and Results - Study 2*


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*Hypothesis 1* - Binge Eaters predicted to score higher on the weight-related teasing subscales of the Perception of Teasing Scale (POTS) as compared to nonbinge eaters.

*Statistical Procedure* - One-Way MANOVA.

Independent Variable: binge status (binge, nonbinge)

Dependent Variables: POTS subscales (Weight Teasing-Frequency, Weight Teasing-Effect, Competency Teasing-Frequency, Competency Teasing-Effect)

*Results* - Significant main effect of binge status revealing that binge eaters reported being more upset by being teased about their weight as compared to nonbinge eating controls. There was no difference in frequency of weight-related teasing reported by the binge eaters and the comparison group

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*Hypothesis 2* - Participants who read the teasing vignettes would report higher levels of negative affect, as compared to the neutral vignette. Binge eaters who read the weight-related teasing vignette were predicted to report more negative affect than binge eaters who read the academic teasing and the neutral vignette.

*Statistical Procedure* - 2 X 3 ANOVA

Independent Variables: binge status (binge, nonbinge) and  
vignette (weight teasing, academic teasing, neutral)

Dependent Variable: negative mood as measured by PANAS



*Results* - Significant main effect of vignette with those who read the weight-related teasing and academic-related teasing vignettes reporting significantly more negative affect than those who read the neutral vignette. No significant differences between the academic-related teasing and the weight-related teasing vignettes were found. No interaction between binge status and vignette was found.

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*Hypothesis 3* - Binge eaters would eat more than the nonbingeing comparison group. Binge eaters who read the weight-related teasing vignette were predicted to eat more than binge eaters who read the academic-teasing and neutral vignettes. Nonbinge eaters' eating behaviour was not expected to be affected by either type of teasing.

*Statistical Procedure* - 2 X 3 ANOVA

Independent Variables: binge status (binge eaters or nonbinge eaters) and  
vignette (weight teasing, academic teasing, or neutral)

Dependent Variable: number of candies eaten

*Results* - Significant main effect of binge status, revealing that binge eaters ate significantly more candy than the nonbinge eaters.

Participants who read the weight-related teasing vignette ate significantly more candies than those who read the neutral vignette.

Significant difference in the amount eaten between binge eaters who read the weight-related teasing vignette and the binge eaters who were exposed to the neutral vignette.

Significant difference in amount eaten between binge eaters who read the weight-

related teasing vignette and those who read the academic-related vignette.

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*Hypothesis 4* - Binge eaters would have overall lower levels of state self-esteem than their nonbinge eating counterparts.

Binge eaters who read either teasing vignettes would report lower levels of state self-esteem on the social evaluation subscale.

Binge eaters who read the weight-related teasing vignette would report lower levels of appearance related state self esteem as compared to binge eaters in the other two conditions and all nonbinge eaters.

*Statistical Procedure* - 2 X 3 MANOVA

Independent Variables: binge status (binge, nonbinge) and  
vignette (weight teasing, academic teasing, or neutral)

Dependent Variable: SSES subscales (Total, Academic Performance, Appearance,  
Social Evaluation)

*Results* - Significant main effect of binge status on each of the subscales of the SSES, with binge eaters demonstrating lower levels of self-esteem on all four subscales.

Binge eaters who read the weight-related teasing vignette displayed the lowest levels of state self-esteem of all the groups.

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## Discussion - Study 2

Study 2 was designed to follow up and expand upon the findings of Study 1 and to further investigate the impact of weight-related teasing on eating and mood in binge eaters. More specifically, Study 2 was designed to test whether the adverse effect of weight-related teasing on the eating behaviour of binge eaters was specific to the weight content of the teasing or whether it was a nonspecific effect of teasing in general.

### *Review of Results*

It was hypothesized that weekly binge eaters would report a more extensive history of weight-related teasing in comparison to their nonbinge eating counterparts, as was found in Study 1. The results of Study 2 revealed that the binge eaters in this sample did not report experiencing weight-related teasing more frequently than nonbinge eaters.

However, this particular sample of binge eaters displayed higher scores on the Weight-Related Teasing-Effect subscale of the Perception of Teasing Scale (POTS). This result indicated that although binge eaters in Study 2 did not experience more teasing than the comparison group, they were more upset by being teased about their weight. While this result lends further support to the proposition that there is an association between weight-related teasing and disordered eating, it also signals the likelihood that weight-related teasing plays a unique role in the psychological make-up of binge eaters. A further discussion of the implication of these results follows in the general discussion section.

With respect to the impact of the vignettes on mood, it was predicted that, compared to those who read the neutral vignette, participants who read either of the two teasing vignettes would report more negative affect, with higher levels of negative affect

expected by binge eaters who read the weight-related teasing vignette. Results indicated that reading the weight-related teasing vignette elicited more negative affect than reading the neutral vignette, as was observed in Study 1. Further, reading the academic-related vignette also elicited more negative affect than reading the neutral vignette. However, the level of negative affect reported by those who read the academic-related teasing vignette did not significantly differ from the level of negative affect reported by those in the weight-related condition. Moreover, contrary to predictions, there was no difference in negative affect reported by binge eaters in the weight-related and the academic-related teasing conditions. Thus, binge eaters were equally upset by both forms of teasing.

In terms of eating behaviour, Study 2 predicted that binge eaters would eat more, overall, as compared to nonbinge eaters. This hypothesis was verified in Study 2. This result, also found in Study 1, is consistent with the findings of previous research investigating binge eaters' eating in laboratory settings (Baucom, 1981; Cattanach, 1988). It appears that binge eaters tend to eat more than nonbinge eaters in a variety of experimental settings.

In addition to the predicted main effect of binge status, it was also predicted that there would be an interaction between binge status and vignette on the amount eaten. The overall interaction was not significant. However, when simple effects were calculated separately for binge eaters and for the comparison group, a significant difference was found in the amount eaten between the experimental groups for binge eaters only. Binge eaters who read the weight-related teasing vignette ate significantly more candy than binge eaters who read both the academic-related teasing vignette and the neutral vignette.

The difference in the amount of candy eaten between binge eaters in the academic-related teasing and the neutral conditions was not significant. These results indicate that increased eating is specific to the weight component of teasing for the binge eaters.

Finally, the impact of teasing on participants' state self-esteem was also explored in Study 2. It was predicted that binge eaters would have overall lower levels of state self-esteem than their nonbinge eating counterparts. This hypothesis was verified. Binge eaters reported lower levels of state self-esteem on the composite score and on each of the three subscales of the State Self-Esteem Scale. It has been suggested that binge eaters, as a group, tend to have lower self-esteem since engaging in the binge cycle decreases self-esteem with each successive binge episode (van den Berg et al., 2002). Furthermore, low self-esteem also contributes to the conditions that precipitate binge eating, such as acceptance of the thin ideal and dieting (Polivy & Herman, 1993). The results of Study 2 confirmed this hypothesis, in that binge eaters did score significantly lower on all subscales of the SSES as compared to nonbinge eaters.

It was also predicted that there would be an interaction between binge status (binge eaters, nonbinge eaters) and vignette read (weight-related teasing, academic-related teasing, neutral) on the Social Evaluation and Appearance subscales of the SSES. It was hypothesized that binge eaters who read either teasing vignettes would report lower levels of state self-esteem on the Social Evaluation subscale and that binge eaters who read the weight-related teasing vignette would score lower on the Appearance subscale of the SSES. Of these two hypothesized interactions, neither were verified. The differences in state self-esteem between binge eaters in the three conditions were not statistically

significant. However, the data indicated a trend toward binge eaters in the weight-related teasing condition experiencing lower levels of state self-esteem.

## General Discussion

Binge eating has been discussed at length in the research literature. Although several etiological explanations have been proposed as causes of binge eating, the affect regulation model has received a great deal of attention over the past two decades. The affect regulation model of binge eating suggests that heightened emotional disturbance increases the likelihood that a person will binge (Abraham & Beumont, 1982; Baucom, 1981; Greeno, 2000; Paxton & Diggins, 1997). Individuals binge eat during times of distress because binge eating may temporarily decrease their negative emotions, and provides comfort and/or distraction from negative affect. Thus, under times of increased negative affect, these individuals may engage in binge eating so as not to think about the source of their affective distress (Polivy, 1999).

This body of literature linking negative affect and binge eating initially provided a foundation for the present research. The results of Study 1 supported the affect regulation model. Study 1 demonstrated that reading about weight-related teasing induced negative affect, regardless of participants' binge status. However, the key finding of Study 1 was that only the binge eaters who were exposed to weight-related teasing ate significantly more cookies in response to their negative mood. In other words, everyone who was exposed to the weight-related teasing vignette felt bad, but feeling badly translated into increased eating for binge eaters only. Thus, Study 1 supported the theory that binge eaters may binge in response to negative affective states.

Study 1 suggested that weight-related teasing leads to negative affect and increases eating in binge eaters. However, what was not clear from the design of Study 1

was whether it was the weight-related component of the teasing vignette that led to negative affect and increased eating (among binge eaters), or whether exposure to any form of teasing would have had the same impact. In other words, were the negative mood and the eating specifically related to the weight component of the weight-related teasing or to any form of teasing?

The results of Study 2 revealed that exposure to another form of teasing did not have the same impact as weight-related teasing on binge eaters. Study 2 indicated that binge eaters responded to weight-related teasing differently than to another form of teasing (about academic performance). As in Study 1, all participants who read about teasing experienced more negative affect than did those in the neutral condition. Study 2 demonstrated that participants were similarly upset by reading about weight-related and about academic-related teasing. However, with respect to eating, only those binge eaters who were exposed to weight-related teasing ate more candy; binge eaters in the weight-related teasing condition even ate significantly more than binge eaters in the academic-related condition.

The present research anticipated support for the affect regulation model. It was predicted that binge eaters would be the most upset by reading the weight-related teasing vignette; binge eaters would report more negative affect in the weight-related teasing than the academic-related teasing and neutral conditions. Study 2 sought to verify that only weight-related teasing (and not academic-related teasing) would be upsetting enough to lead binge eaters to eat more. Indeed, previous research has established a firm relationship between binge eating and weight-related teasing (Thompson, Covert et al., 1995;



Womble et al., 2001).

Study 2 certainly appears to suggest that teasing about weight has a unique impact on binge eaters. However, this impact cannot be fully explained by the affect regulation model. If affect regulation was the only mechanism at play, binge eaters would have eaten just as much in the academic-related teasing condition because it affected their mood to the same extent as did the weight-related teasing. Thus, additional explanations for the present results must be explored.

### *Escape Theory and Binge Eating*

Escape theory provides a framework of psychological functioning of binge eaters that may explain their sensitivity to weight-related teasing. This theory is grounded in the notion that binge eaters attempt to escape aversive experiences, namely aversive self-awareness and feelings of low self-esteem, via eating. According to a study conducted by Schwarze, Oliver and Handel (2003), binge eaters are more likely than nonbinge eaters to engage in avoidance coping as measured by the Ways of Coping Questionnaire (Folkman & Lazarus, 1988) and the Coping Inventory for Stressful Situations (Endler & Parker, 1999). Binge eating is an avoidance coping strategy whereby during binges, awareness is reduced, cognitive narrowing occurs, and individuals focus almost exclusively on the sensations related to eating (Heatherton & Baumeister, 1991).

According to escape theory, individuals who binge eat possess certain personality characteristics that make them vulnerable to eating pathology. Heatherton and Baumeister (1991) describe three characteristics of binge eaters that may be relevant to the relationship between weight-related teasing and binge eating. Escape theory suggests that

when females demonstrate the three attitudinal traits described below, they are more likely to be motivated to reduce their level of self-awareness via binge eating (Heatherton & Baumeister, 1991).

The first characteristic is binge eaters' preoccupation with weight and shape. Binge eaters tend to have very high personal expectations related to their body size and shape. Binge eaters' self-image and self-esteem is strongly tied to their appearance and they tend to "buy into" the thin ideal (Polivy & Herman, 1993). They strongly desire thinness and often go to extreme measures such as restricting their food intake in unrealistic ways in order to achieve their goal of weight loss. However, the goal of weight loss is rarely achieved, as restricting food intake leaves individuals both physiologically and psychologically susceptible to binge eating (Heatherton et al., 1990; Herman & Polivy, 1990).

Second, according to escape theory, binge eaters tend to have a particularly high level of self-awareness. Schwarze, Oliver and Handal (2003) evaluated the escape theory of binge eating and found that binge eaters scored higher on negative self-awareness than nonbinge eaters. Heatherton and Baumeister (1991) suggest that high levels of self-awareness are generated by comparing the self to high standards or ideals, ones that are very difficult to achieve. Binge eaters' investment in the thin ideal is, itself, a manner of comparing the self to cultural standards of beauty and thinness. Because these standards to which binge eaters compare themselves are very demanding, they will, at times, fall short of these ideals (Heatherton & Baumeister, 1991). As a result, binge eaters' "...self-awareness will tend to be focused on personal inadequacies, faults, or other deficiencies,

and it may be reflected in low self-esteem and in unflattering attributions about the self (such as blaming the self for failure)” (Heatherton & Baumeister, 1991, p. 89). It is from this negative self-awareness and feelings of low self-esteem that binge eaters attempt to escape by engaging in binge eating.

The third personality characteristic outlined in escape theory is binge eaters’ tendency to have a stronger than usual desire to be perceived favourably by others (Heatherton & Baumeister, 1991). Binge eaters have consistently been found to score higher on measures of self-consciousness (Beebe, Holmbeck, Albright, Noga, & et al., 1995; Schwarze et al., 2003) and are hypersensitive to social interactions and others’ regard of them (Steiger, Gauvin, Jabalpurwala, Seguin, & Stotland, 1999). Steiger and colleagues (1999) suggest that bulimics are prone to negatively experience interpersonal transactions that others might perceive as neutral. Although this study looked specifically at bulimics, it is likely that these findings also apply to binge eaters since binge eating is the cardinal symptom of bulimia. In Study 2, compared to controls, binge eaters more strongly endorsed the item from the SSES, “I am worried about what other people think about me.” These results suggest that social relationship are often difficult for binge eaters and that being evaluated poorly by others is a key concern.

#### *Weight-Related Teasing and Escape Theory*

As suggested by escape theory, binge eaters place a great deal of importance on being accepted by others. Teasing is often interpreted as veiled criticism or as an indication of interpersonal rejections and social exclusion, particularly in those with lower self-esteem (Kowalski, 2000). Kowalski (2004) suggests that individuals who are highly

sensitive to the possibility of rejection respond particularly negatively to being teased.

Sensitivity to social rejection characterizes binge eaters and helps explain their particularly strong reaction to the teasing they have experienced in their lifetime.

Binge eaters may be particularly motivated to escape the distress created by weight-related teasing because it mobilizes all three of escape theory's suggested personality characteristics that make individuals vulnerable to binge eating (Heatherton & Baumeister, 1991). Binge eaters' preoccupation with weight and shape is likely activated by weight-related teasing. Although there is a plethora of empirical research indicating that weight-related teasing is related to eating disturbances (Cash, 1995; Cattarin & Thompson, 1994; Fabian & Thompson, 1989; Grilo et al., 1994 42; Paxton et al., 1999; Thompson, Heinberg et al., 1999), the exact mechanism whereby teasing leads to binge eating is unknown. It is likely that being teased about weight brings into conscious awareness thoughts that they are not living up to the high standards of the thin idea. While binge eaters may not be more upset by weight related teasing than they are by other forms of teasing, they may be particularly motivated to escape the state of self-awareness that it induces.

Weight-related teasing likely activates binge eaters' high level of self-awareness that comes from comparing the self to the high standard of the thin ideal. Their high self-awareness, in turn, leads binge eaters to focus on their deficiencies and triggers low self-esteem (Heatherton & Baumeister, 1991). Finally, binge eaters tend to subscribe to the belief that others are critical of them and have a strong need to be perceived in a positive light by others. Weight-related teasing is a concrete example of critical evaluation. It is

also a signal of rejection by others, and not only provides the message that the victim is not seen in a positive way, but that the victim is not meeting the standards of attractiveness laid out by society.

### *Weight-Related Teasing and Self-Esteem*

Weight-related teasing may be more likely to trigger aversive self-awareness than academic-related teasing due to its level of threat to binge eaters' self-esteem. Escape theory postulates that experiences that bring binge eaters' inadequacies to awareness may be reflected in lowered self-esteem (Heatherton & Baumeister, 1991). Thus, exposure to information that is particularly threatening to self-esteem is more likely to motivate escape from this aversive self-awareness via binge eating. Weight- and shape-related information is particularly important to binge eaters' self-esteem. Binge eaters are less likely than controls to base their self-esteem on their competencies, such as academic performance (Geller et al., 1998). There is evidence to suggest that individuals who report pathological patterns of eating, including restrained eaters, tend to disproportionately base their self-worth and self-esteem on weight and shape rather than on other factors such as their relationships or competencies (Geller et al., 1998; Geller, Srikameswaran, Cockell, & Zaitsoff, 2000; McFarlane, McCabe, Jarry, Olmsted, & Polivy, 2001). McFarlane and her colleagues (2001) compared unrestrained eaters, restrained eaters and eating disorder subjects (the majority of which were binge eaters) on several dimensions of weight-related self-evaluation. Their results indicated that individuals with eating disorders exhibited more negative weight-related self-evaluation than restrained and unrestrained eaters. Furthermore, eating disordered individuals were differentiated from restrained

eaters by the extent to which weight-related self-evaluation was carried over to other domains of self-esteem. The eating disordered group was more likely to attribute their performance at work or school to weight loss or gain. This body of evidence suggests that information related to shape and/or weight, such as weight-related teasing plays a crucial role in binge eaters' self-evaluations, above and beyond information related to their abilities, as described in the academic-related teasing vignette.

Taking these theoretical explanations into account, participants in the present research who were exposed to weight-related teasing might have been reminded of their own shortcomings with respect to achieving a thin body and being accepted by others. Scores on the SSES in Study 2 indicated that binge eaters who read about weight-related teasing reported the lowest level of state self-esteem as compared to all experimental groups. It is possible that these binge eaters experienced this weight-related information as particularly threatening because of the importance that being thin plays in determining their self-esteem. In turn, they may have experienced high levels of aversive self-awareness. Once this aversive self-awareness occurred, participants could have been motivated to escape their awareness by eating more cookies or candies. Binge eating might have played a role in allowing them to focus on lower levels of experience such as the sensations and actions of eating (Heatherton & Baumeister, 1991).

Study 2 demonstrated that binge eaters who read either teasing vignette experienced negative affect, but it was only in response to the weight-related teasing vignette that binge eaters demonstrated increased eating. Based on the explanation of escape theory presented above, being exposed to teasing of an academic nature does not

seem to trigger aversive self-awareness. In other words, it appears as though academic-related teasing does not activate all of binge eaters' vulnerabilities the way weight-related teasing does. Although academic-related teasing is an example of critical evaluation and rejection, the absence of the weight component may be key. It seems that the weight-related component of teasing is crucial to experiencing low self-esteem and aversive self-awareness that precedes binge eating in binge eaters.

Overall, the results of this research do not support a strict affect regulation model. Simply being upset by teasing does not lead binge eaters to engage in increased eating. Previous research has also questioned the necessity of negative mood as a mediator between negative experiences and binge eating. Twenge, Catanese, and Baumeister (2002) conducted four separate experiments evaluating the role of feeling socially excluded from others and found that social exclusion can increase self-defeating behaviour (i.e. binge eating) without emotion playing a substantial part. These authors suggest that the mechanisms that led to self-defeating behaviours, such as binge eating or drinking, may operate with minimal emotional involvement and that the underlying process may be a more cognitive one.

In the present research, the increased eating seen among binge eaters exposed to weight-related teasing appears to have been the result of aversive self-awareness in the important realm of weight and shape, rather than being the result of an affect regulation mechanism as was originally conceptualized. Although the results of the present studies seem to fit well within the parameters of the escape theory of binge eating, this explanation is, at this stage, hypothetical. The hypothesis that weight-related teasing leads

to negative self-awareness in binge eaters awaits empirical verification. More specifically, this research should be conducted with specific investigations exploring binge eaters' actual escape from self-awareness.

#### *Limitations of the Present Research*

There are several limitations to the present research. The most apparent limitation is in the sample characteristics. First of all, the sample of binge eaters who participated in these two studies could be generally referred to as subclinical binge eaters. These participants were recruited from a university sample and only a few reported during the debriefing that they had ever been diagnosed with an eating disorder. Thus, using a subclinical sample to investigate a clinical phenomenon somewhat limits the generalizability to a clinical sample.

A specific limitation of Study 1, that was remedied in Study 2, was that the information regarding binge frequency was very limited, thus characteristics of binge eaters, aside from binge eating once or more each week, was largely unknown. The inclusion of the EDE-Q in Study 2 allowed for more specific information about binge frequency, loss of control over eating, and compensatory behaviours. Study 2's sample reported binge eating, on average, twice a week, which is the clinical cutoff for diagnosing bulimia nervosa and binge eating disorder. However, without a comprehensive evaluation of eating patterns and symptoms, an official diagnosis of an eating disorder could not be made using the information gleaned from the questionnaires alone.

Another limitation to this research was that binges were defined somewhat subjectively. The DSM-IV definition of binge eating states that the amount of food



consumed is definitely larger than most people would eat within a similar time frame, while experiencing a loss of control over eating (APA, 2000). Although a definition of binge eating was offered to participants as a reference before responding to questions about binge eating (as feeling out of control when eating an amount of food larger (such as a quart of ice cream) than most people would eat in a similar circumstance, in a similar time frame) without qualitative data, it is impossible to determine if participants' binge episodes were objective binges or subjective binges. Although this is certainly a limitation of this study, it is also a limitation of research on binge eating in general. Some researchers have suggested that the amount of food consumed during a binge is not the defining feature of the binge and that binges should be defined subjectively and determined by factors other than caloric content (Fairburn & Wilson, 1993; Rosen et al., 1986). Currently, there are no data showing fundamental differences in binges, or their association with comorbid psychopathology, as a function of the quantity of food consumed (Fairburn & Wilson, 1993).

Another potential limitation to this research was that the investigator was not blind to participants' binge status during the experiment. Participant's names were generated on the basis of their binge status, with binge eaters on one list and nonbinge eaters on another. Although potential binge status was known at the time of contacting participants, no particular attention was paid to their binge status while participants were being tested. For example, potential binge status was not noted along with participants' names on the schedule of testing. Furthermore, participants' binge status was not fully determined until after they had completed the study and their responses to the questionnaires were

evaluated. Despite these precautions taken to ensure the experimenter's knowledge of binge status did not affect the testing, it is possible this occurred without the experimenter's awareness (see Rosenthal (1966) for description of experimenter effects). In the future, lists of potential participants could be amalgamated by another researcher, independent of the study, so that the experimenter is truly blind to the binge status of the participants throughout the testing.

A limitation that may be relevant to both Studies 1 and 2, was the possible contamination of the cover story. Because this research was conducted with a relatively small pool of potential participants over a period of two years, it is possible that the true purpose of the study was known to participants before coming to the study. Although participants were asked during their debriefing not to talk to anyone else about the true purpose of the study, it is possible that they did not abide by this promise. Although the post-experimental questions in Study 2 indicated that participants did not know about the study before participating, participants may not have been entirely honest. Thus, the possibility of participants discussing the cover story and the true nature of the study with other potential participants remains a limitation of this research and could only be overcome by conducting this research at different, larger institutions simultaneously.

Finally, this study was limited in that it examined teasing, mood, and binge eating for females only. The demographics of the psychology participant pool are such that it would have been very difficult to obtain an adequate number of male binge eaters to include them in the present research. However, research suggests that the relationship between weight-related teasing and binge eating is somewhat different for males and

females. Womble and colleagues (2001) reported that the link between weight-related teasing and binge eating is more direct and is not necessarily mediated by negative affect for male participants only. Because the present research found a similar direct relationship between weight-related teasing and binge eating, exploring how males react, as compared to females, in an experimental setting may help to clarify this picture.

#### *Future Research Suggestions*

Although research has established that using teasing vignettes to induce negative mood is successful (Furman & Thompson, 2002), this strategy may still be somewhat limited in terms of ecological validity. Thus, future research may want to consider using a more vivid manner of exposing participants to teasing. Certainly, exposing participants to teasing in a laboratory setting raises ethical concerns. However, using a richer manner of vicarious exposure to teasing, such as having participants watch a video of someone being teased, may produce a stronger impact in the minds of participants, as it would provide both visual and auditory cues that may make the situation to which participants are exposed more vivid, and in turn may trigger a stronger reaction in those exposed to the scenario.

Study 2 investigated the specific impact of weight-related teasing as compared to academic-related teasing. However, future studies may want to investigate the specific impact of weight-related teasing by differentiating it not only from academic-related teasing but from appearance-related teasing as well. Appearance-related teasing has been found to be distressing and can have a profound effect on the victims' feelings (Thompson, Heinberg et al., 1999). Most of the research investigating the effects of

teasing on body dissatisfaction, eating disturbance, depression, and lower self-esteem has specifically focused on weight-related teasing. However, there may be a different impact on binge eaters when they are teased about their weight as compared to general appearance such as hair or height.

The present research has potential implications for the current understanding of binge eating. Study 2's finding that binge eaters increased their eating only in response to the weight-related teasing vignette may call into question the mediating role of negative affect. The results of Study 2 suggest that binge eaters did not simply eat in response to negative affect, but that their increased eating was driven by another, perhaps more cognitive factor, such as escape from aversive self-awareness. In other words, the link between weight-related teasing and binge eating may be mediated by factors other than negative affect.

Future research should continue investigating the relationship between weight-related teasing and binge eating, with respect to escape theory. The present research proposed escape theory as an explanation for the present results but did not directly test its central tenets. To date, only a few empirical studies have investigated escape theory. More specifically, research investigating psychological variables involved in escape theory has examined differences between binge eaters and controls in avoidance coping (Paxton & Diggins, 1997), self-awareness (Schwarze et al., 2003), and negative affect (Beebe et al., 1995). These studies reveal that binge eaters are higher in negative affect, lower in self-esteem and use more avoidance coping than nonbinge eaters. However, these studies also suggest that there are challenges associated with evaluating the escape theory of binge

eating, particularly in selecting measures of aversive self-awareness that are consistent with the type of self-awareness described in escape theory. For instance, several studies measure negative self-awareness using trait-based scales like the Self-Consciousness Scale (Scheier & Carver, 1985), the Rosenberg Self-Esteem Scale (Rosenberg, 1979) and the Beck Depression Inventory-II (Beck, Steer, & Brown, 1996). Tassava and Ruderman (1999) suggest that these instruments tend to measure self-awareness as a stable trait. It has been suggested that aversive self-focus is a more temporary experience and that it should be measured situationally, rather than as a chronic tendency. Measurement issues aside, researchers appear to be in agreement that escape theory offers a compelling explanation as to why some individuals engage in binge eating (Tassava & Ruderman, 1999). There is also a consensus that escape theory is very difficult to evaluate empirically and is still in need of true empirical investigation.

In order to evaluate escape theory, future research may need to approach evaluating escape theory in a more direct manner, rather than relying on questionnaires. One possibility for evaluating escape theory could involve making use of qualitative data. For instance, qualitative data could be collected from participants after exposure to weight-related teasing or academic-related teasing but before they engage in escape mechanisms such as eating. Gaining insight into what goes on in binge eaters' mind following exposure to something that produces negative affect may be the most direct way to empirically measure escape theory. Assuming that binge eaters have equivalent levels of negative affect after exposure to both weight-related and academic-related teasing (as was found in the current research), then participants' internal experience

following exposure to these two types of teasing could be explored. For instance, following exposure to either weight- or academic-related teasing, participants could be asked to describe their internal experience and rate how tolerable their negative feelings are, and how motivated they are to escape their negative internal experiences. In this instance, it would be expected that binge eaters would find the experiences triggered by being exposed to weight-related teasing less tolerable and that they would be more motivated to escape these feelings than binge eaters in the academic-related teasing condition.

### *Conclusions*

The present research used an experimental design to demonstrate that weight-related teasing has a significant impact on binge eaters. Binge eaters typically report having experienced more weight-related teasing in their past than do nonbinge eaters and they report being more upset than nonbinge eaters by this teasing. Finally, they display a specific eating response to weight-related teasing. Despite evidence confirming that weight-related teasing and binge eating are linked, (Cash, 1995; Grilo et al., 1994; Neumark-Sztainer et al., 2002; Womble et al., 2001), the exact mechanisms of this link remains elusive. The present research demonstrated that the relationship between weight-related teasing and binge eating is not simply mediated through negative affect, as was originally suggested. It is likely that a complex interplay between personal characteristics, such as sensitivity to social rejection (Kowalski, 2004), importance of shape and weight to self-worth (Geller et al., 1998), investment in the thin ideal (Thompson, Coover et al., 1999), and motivation to escape aversive self-awareness (Heatherton & Baumeister,

1991) explain the relationship between weight-related teasing and binge eating.

Although the exact mechanisms explaining the relationship between binge eating and weight-related teasing are not yet fully determined, the magnitude of the impact on binge eaters is known. Special attention should be paid to promoting this knowledge, particularly within the school system. Individuals who are teased about their weight not only appear to suffer the consequences of being socially excluded and having lower levels of self-esteem but are also susceptible to developing pathological eating habits, such as binge eating. Although it would certainly be an overstatement to assume that these individuals would not develop eating disturbances if they were not teased about their weight, the absence of this upsetting experience would likely decrease their likelihood of feeling poorly about their bodies.

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## Appendix A

## Cookie Recipes

## Oatmeal Raisin Cookies:

½ cup margarine, softened  
½ cup shortening  
1 cup brown sugar, packed  
½ cup white sugar  
2 eggs  
2 tbsp water  
2 tbsp corn syrup  
2 tsp vanilla  
2 tsp cinnamon, ground  
¼ tsp nutmeg  
⅛ tsp ginger  
1 ½ cups all purpose flour  
1 tsp baking soda  
1 tsp salt  
3 cups oats  
1 cup raisins

Cream margarine, shortening, sugars, eggs, corn syrup, water and vanilla; beat well. Combine flour, baking soda, salt, nutmeg, cinnamon, and ginger; add to creamed mixture. Beat well; stir in oats and raisins. Bake at 350 degrees Fahrenheit for 5 minutes.

## Chocolate Chip Cookies:

1 cup butter  
½ cup white sugar  
1 cup packed brown sugar  
1 tsp vanilla extract  
2 eggs  
2 ½ cups all purpose flour  
1 tsp baking soda  
1 tsp salt  
2 cups semisweet chocolate chips

Preheat oven to 375 degrees Fahrenheit. In a large bowl, cream together butter and sugar until smooth. Beat in the vanilla and eggs one at a time. Combine the flour, baking soda and salt; stir into the sugar mixture. Finally, mix in the chocolate chips. Bake for 4 minutes.

## Double Chocolate Cookies:

½ cup packed brown sugar  
¼ cup margarine

½ tsp vanilla  
1 egg white (large)  
3 tbsp cocoa  
½ tsp baking soda  
1/8 tsp salt  
½ cup chocolate chips

Beat brown sugar and margarine until light and fluffy. Add vanilla and egg white until just blended. Add flour, cocoa , baking soda and salt just until blended. Stir in chocolate chips. Bake at 375 degrees Fahrenheit for 4 minutes.

## Appendix B

## Social Interaction Vignettes - Study 1

## Weight Teasing vignette

Elaine got up Saturday morning and decided to make a trip to the mall for her mom, who needed flowers for a party she was hosting tonight.

At the flower shop, Elaine found a bouquet of flowers she thought her mom would like for the centerpiece. As she left the flower shop and headed into the rest of the mall, she saw Lisa and Melanie, two girls from school.

"Hi, Elaine," Lisa said. "Buying flowers for someone?" she said as she disgustedly motioned to the flowers in Elaine's arms.

"They're for my mom party tonight," Elaine explained.

"Sure they are. Where are you going now then? The plus-size store is in the other direction," Lisa asked, while snickering with Melanie.

"Yeah, fatty. You better watch out. If you gain any more weight you won't be able to even fit through the door of the mall next time." Melanie chimed in, laughing.

Not wanting to reply to their teasing, Elaine turned around and headed for the nearest exit, scanning to see what direction Melanie and Lisa went.

## Neutral vignette

Elaine got up Saturday morning and decided to make a trip to the mall for her mom, who needed flowers for a party she was hosting tonight.

At the flower shop, Elaine found a bouquet of flowers she thought her mom would like for the centerpiece. As she left the flower shop and headed into the rest of the mall, she saw Lisa and Melanie, two girls from school.

"Hi, Elaine," Lisa said. "Buying flowers for someone?" she said as she motioned to the flowers in Elaine's arms.

"They're for my mom's party tonight," Elaine explained.

"That's nice. Where are you going now then? That new store is in the other direction," Lisa mentioned.

"Yeah, well see you in class on Monday," Melanie chimed in.

Thinking that she didn't need anything else from the mall today, Elaine turned and headed for the nearest exit.



## Appendix C

## The Positive and Negative Affect Schedule (PANAS)

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to the word. Indicate to what extent you feel this way *right now*, that is, *at the present moment*. Use the following scale to record your answers.

1 = very slightly or not at all

2 = a little

3 = moderately

4 = quite a bit

5 = extremely

\_\_\_\_\_ interested  
\_\_\_\_\_ distressed  
\_\_\_\_\_ excited  
\_\_\_\_\_ upset  
\_\_\_\_\_ strong  
\_\_\_\_\_ guilty  
\_\_\_\_\_ scared  
\_\_\_\_\_ hostile  
\_\_\_\_\_ enthusiastic  
\_\_\_\_\_ proud  
\_\_\_\_\_ irritable  
\_\_\_\_\_ alert  
\_\_\_\_\_ ashamed  
\_\_\_\_\_ inspired  
\_\_\_\_\_ nervous  
\_\_\_\_\_ determined  
\_\_\_\_\_ attentive  
\_\_\_\_\_ jittery  
\_\_\_\_\_ active  
\_\_\_\_\_ afraid

## Appendix D

## Binge Scale (BS)

Binge eating is a rapid consumption of a large amount of food in a period of time usually less than two hours.

Read the items carefully and check the option (a, b, c, d, or e) that best applies to your binge eating.

1. How often do you binge eat?
  - A. Never
  - B. Seldom
  - C. Once or twice a month
  - D. Once or twice a week
  - E. Almost every day

If you answered “Never” to this question, please go to the next questionnaire.

2. What is the average length of a binge episode?
  - A. Less than 15 minutes
  - B. 15 minutes to one hour
  - C. One hour to four hours
  - D. More than four hours
3. Which of the following statements best applies to your binge eating?
  - A. I eat until I have had enough to satisfy me
  - B. I eat until my stomach feels full
  - C. I eat until my stomach feels painfully full
  - D. I eat until I can't eat anymore
4. Do you vomit after a binge?
  - A. Never
  - B. Sometimes
  - C. Usually
  - D. Always
5. Which of the following best applies to your eating behaviour when binge eating?
  - A. I eat more slowly than usual
  - B. I eat about the same as usual
  - C. I eat very rapidly
6. How much are you concerned about your binge eating?
  - A. Not bothered at all

- B. Bothers me a little
- C. Moderately concerned
- D. Major concern

7. Which best describes your feelings **during** a binge?
- A. I feel that I could control the eating if I chose
  - B. I feel that I have at least some control
  - C. I feel completely out of control
8. Which of the following describes your feelings **after** a binge?
- A. I feel fairly neutral, not too concerned
  - B. I am moderately upset
  - C. I hate myself
9. Which of the following describes your feelings after a binge?
- A. Not depressed at all
  - B. Mildly depressed
  - C. Moderately depressed
  - D. Very depressed

## Appendix E

## Perception of Teasing Scale

We are interested in whether you have been teased and how this affected you.  
 First, for each question, rate how often you think you were teased using the scale provided, 'never' (1) to 'always' (5).  
 Second, unless you respond 'never' to the question, rate how upset you were by the teasing, 'not upset' (1) to 'very upset' (5).

1. People made fun of you because you were heavy.

1      2      3      4      5

How upset were you?

1      2      3      4      5

2. People made jokes about you being heavy.

1      2      3      4      5

How upset were you?

1      2      3      4      5

3. People laughed at you for trying out for sports.

1      2      3      4      5

How upset were you?

1      2      3      4      5

4. People called you names like "fatso".

1      2      3      4      5

How upset were you?

1      2      3      4      5

5. People pointed at you because you were overweight.

1      2      3      4      5

How upset were you?

1      2      3      4      5

6. People snickered about your heaviness when you walked into a room alone.

1      2      3      4      5

How upset were you?

1      2      3      4      5

7. People made fun of you by repeating something you said because they thought it was dumb.

1      2      3      4      5

How upset were you?

1      2      3      4      5  
8. People made fun of you because you were afraid to do something.

1      2      3      4      5  
How upset were you?

1      2      3      4      5

9. People said you acted dumb.

1      2      3      4      5

How upset were you?

1      2      3      4      5

10. People laughed at you because you didn't understand something.

1      2      3      4      5

How upset were you?

1      2      3      4      5

11. People teased you because you didn't get a joke.

1      2      3      4      5

How upset were you?

1      2      3      4      5

## Appendix F

## Revised Restraint Scale

The following questions refer to your normal eating patterns and weight fluctuations.

1. How often are you dieting?  
a. Never      b. Rarely      c. Sometimes      d. Usually      e. Always
2. What is the maximum amount of weight (in pounds) you have ever lost within a month?  
a. 0-4      b. 5-9      c. 10-14      d. 15-19      e. 20+
3. What is the maximum weight you have gained within a week?  
a. 0-1.0      b. 1.1-2.0      c. 2.1-3.0      d. 3.1-5.0      e. 5.1+
4. In a typical week, how much does your weight fluctuate?  
a. 0-1.0      b. 1.1-2.0      c. 2.1-3.0      d. 3.1-5.0      e. 5.1+
5. Would a weight fluctuation of 5 pounds affect the way you live your life?  
a. Not at all      b. Slightly      c. Moderately      d. Very much
6. Do you eat sensibly in front of others and splurge alone?  
a. Never      b. Rarely      c. Often      d. Always
7. Do you give too much time and thought to food?  
a. Never      b. Rarely      c. Often      d. Always
8. Do you have feelings of guilt after overeating?  
a. Never      b. Rarely      c. Often      d. Always
9. How conscious are you of what you are eating?  
a. Not at all      b. Slightly      c. Moderately      d. Extremely
10. How many pounds over your desired weight were you at your maximum weight?  
a. 0-1      b. 1-5      c. 6-10      d. 11-20      e. 21+
11. What is your maximum weight ever? \_\_\_\_\_
12. When you break your diet, do you react by:  
a. Going right back on the diet  
b. Compensating by eating less for a while  
c. Continuing to eat non-diet foods and start the diet another day  
d. Get rid of the food but vomiting or taking laxatives  
e. Not applicable

## Appendix G

## State Self Esteem Scale

1 = not at all    2 = a little bit    3 = somewhat    4 = very much    5 = extremely

1. I feel confident in my abilities.  
1      2      3      4      5
2. I am worried about whether I am regarded as a success or failure.  
1      2      3      4      5
3. I feel satisfied with the way my body looks right now.  
1      2      3      4      5
4. I feel frustrated or rattled about my performance.  
1      2      3      4      5
5. I feel that I am having trouble understanding things that I read.  
1      2      3      4      5
6. I feel that others respect and admire me.  
1      2      3      4      5
7. I am dissatisfied with mt weight.  
1      2      3      4      5
8. I feel self-conscious.  
1      2      3      4      5
9. I feel as smart as others.  
1      2      3      4      5
10. I feel displeased with myself.  
1      2      3      4      5
11. I feel good about myself.  
1      2      3      4      5
12. I am pleased with my appearance right now.  
1      2      3      4      5
13. I am worried about what other people think about me.  
1      2      3      4      5
14. I feel confident that I understand things.  
1      2      3      4      5
15. I feel inferior to others at the moment.  
1      2      3      4      5
16. I feel unattractive.  
1      2      3      4      5
17. I feel concerned about the impression I am making.  
1      2      3      4      5
18. I feel that I have less scholastic ability right now than others.  
1      2      3      4      5
19. I feel like I'm not doing well.  
1      2      3      4      5
20. I am worried about looking foolish.  
1      2      3      4      5

## Appendix H

## Contact Script

You are receiving this email/phone call because your name was given to me by the participant pool, indicating you are interested in participating in research for bonus points. I am a graduate student in psychology and am currently looking for females to participate in research that is looking at how memories affect people's sense of taste and will be conducting a taste test with 3 different types of candies. Because this is a taste test, I want to make sure you do not have any food allergies that would affect your participation (chocolate & peanut butter).

This study is worth 2 bonus points and can be put toward a psychology course of your choosing. The study will last for approximately one hour. I am listing the available time slots for participating in this study below. Participants are run individually so if you are interested in a particular time slot, please be aware that I am offering these slots on a first-to-respond basis. Please email me back as soon as possible to reserve a time slot that is good for you. If you are interested in participating in this research study, please either reply to this email (aubie@uwindsor.ca) or call me at 253-3000, ext. 4708.



## Appendix I

## Consent Form - Study 1

## CONSENT TO PARTICIPATE IN RESEARCH

## The Influence of Memory on Taste

You are asked to participate in a research study conducted by Cheryl Aubie and Dr. Josee Jarry from the psychology department at the University of Windsor. The results will contribute to a dissertation pilot research project. If you have any questions about the research, please feel free to contact Dr. Josee Jarry at 253-3000, ext. 2237, or via email at [jjarry@uwindsor.ca](mailto:jjarry@uwindsor.ca).

## PURPOSE OF THE STUDY

The purpose of the study is to examine the impact of reading different types of stories on taste ratings.

## PROCEDURES

If you volunteer to participate in this study, we would ask you to do the following things: You will be randomly assigned to read one of two stories and you will be asked to complete some questions about your reactions to the story you read. You will also be asked to participate in a taste test of three different types of cookies. In addition, you will be asked to answer several questionnaires. Some of these questionnaires will pertain directly to this present study, while some others are part of another study being conducted in this laboratory.

You will remain in this laboratory for the duration of the study. The entire study will last approximately one hour and will be completed in one session. If you would like to receive information about the results of this study, you will be given an opportunity to sign up to receive such information once the study is complete.

## POTENTIAL RISKS AND DISCOMFORTS

You will be asked a variety of questions which may be personal in nature. A risk associated with this study is the possibility that thinking about these personal issues may raise some psychological and emotional concerns for you. If during or after the study, you have concerns you wish to discuss please feel free to contact Student Counselling Centre at 253-3000, ext. 4616.

## POTENTIAL BENEFITS TO PARTICIPANTS AND/OR SOCIETY

You will not benefit from the current study other than the opportunity to learn about and contribute to psychological research. The benefit to society is increasing scientific knowledge in the area of memory and taste experiences.

## PAYMENT FOR PARTICIPATION

You will not receive any monetary payment for your participation. You will, however,

receive two bonus marks toward a psychology course of your choice.

#### CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. Any information you provide will be used for research purposes only, which may eventually include publication in a research article. Your name will not appear on any of the questionnaires you fill out or in any future publications. The data you supply will only be identified by number. Data will be stored for 2 years in a secure filing cabinet.

#### PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without any consequences of any kind. You may exercise the option of removing your data from the study. You may also refuse to answer any questions you do not want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise that warrant doing so.

#### RIGHTS OF RESEARCH PARTICIPANTS

You may withdraw your consent at any time and discontinue participating without penalty. This study has been reviewed and received ethics clearance through the University of Windsor Research Ethics Board. If you have questions regarding your rights as a research participant, contact:

Research Ethics Coordinator  
University of Windsor  
Windsor, ON N9B 3P4

Telephone: (519) 253-3000 ext. 3916  
Email: [ethics@uwindsor.ca](mailto:ethics@uwindsor.ca)

#### SIGNATURE OF RESEARCH PARTICIPANT

I understand the information provided for the study "The Influence of Memory on Taste" as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

\_\_\_\_\_  
Name of participant (please print)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of participant

#### SIGNATURE OF INVESTIGATOR

In my judgement, the participant is voluntarily and knowingly giving informed consent to participate in this research study.

\_\_\_\_\_  
Signature of investigator

\_\_\_\_\_  
Date

## Appendix J

## Letter of Information

You have been asked to participate in a research study conducted by Cheryl Aubie and Dr. Josee Jarry at the University of Windsor entitled: The Influence of Memory on Taste. The results will contribute to a pilot study leading up to a Doctoral dissertation. The purpose of the current study is to examine the relation between recalling certain memories and taste. If you volunteer to participate in this study, you will be asked to read a story and complete some questions about your reactions to the story. Following answering the questions, you will be asked to participate in a taste test of three different types of cookies. Following the taste test, you will be asked to answer a few questionnaires. The entire study will last approximately one hour. You will receive two bonus marks towards a psychology course of your choice.

You will be asked a variety of questions which may be personal in nature. A risk associated with this study is the possibility that thinking about these personal issues may raise some psychological and emotional concerns for you. If during or after the study, you have concerns you wish to discuss please contact the Psychological Services Centre on Sunset at 253-3000 ext. 7012.

You will not benefit from the current study other than the opportunity to learn about and contribute to psychological research. The benefit to society is increasing scientific knowledge in the area of memory and taste experiences.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. Any information you provide will be used for research purposes only, which may eventually include publication in a research article. Your name will not appear on any of the questionnaires you fill out or in any future publications. The data you supply will only be identified by number. Data will be stored for 2 years in a secure filing cabinet.

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may exercise this option of removing your data from the study. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise that warrant doing so. In all those circumstances, you will still earn the specified number of bonus marks.

This study has been reviewed and received ethics clearance through the University of Windsor Research Ethics Board. If you have questions regarding your rights as a research subject please contact:

Research Ethics Co-ordinator  
3916  
University of Windsor  
Windsor, Ontario N9B 3P4

Telephone: (519) 253-3000, ext.

E-mail: [ethics@uwindsor.ca](mailto:ethics@uwindsor.ca)

## Appendix K

### Instruction Script – Study 1

#### Instructions for reading vignette:

The first thing you will be doing today is reading this story. While you are reading it, try to put yourself in Elaine, the main character's, situation as much as you can. Once you are finished reading this story, could you please answer these questions and place them in the envelope. Once you are finished this part of the study, I will bring in the cookies for the taste test part of the study.

#### Directions for cookie taste test:

There are 3 different types of cookies for you to taste today. I will explain how I would like you to go about doing the taste test, and then I will leave you alone to complete your ratings. I would like you to taste the cookies in order, so, taste cookie A, then cookie B and then cookie C. Before you taste cookie A, please have a drink of the water to cleanse your palate, then taste cookie A. You may have as many cookies from bowl A as you need to make your taste ratings. Once you have finished rating cookie A, take another drink of water to cleanse your palate, then move on to cookie B. Make your taste ratings for cookie B, have a drink of water again and move onto cookie C. It is important that once you have finished rating a cookie that you not go back to it and change your ratings.

Once you are all finished making your taste ratings, you can feel free to have as many cookies as you like. These are set aside for only you and there are plenty. I will be back in 10 minutes.

#### Directions for questionnaire package:

For the last part of the study, I would like you to fill out this questionnaire package. Some of the questionnaires are directly related to this particular study, and some are part of a larger study going on in this lab. It will take you about 15-20 minutes to complete this part of the study and I will check to see how you are doing in about 10-15 minutes.

## Appendix L

## Vignette Identification Question - Study 1

How easily could you imagine yourself being in Elaine's situation? (Circle one)

Couldn't imagine being  
in her situation at all

Could imagine being  
in her situation completely

0

1

2

3

4

5

## Appendix M

## Demographic Questions

Please answer the following demographic questions:

Age: \_\_\_\_\_

Year in university: \_\_\_\_\_

Ethnicity: \_\_\_\_\_

Mother's occupation: \_\_\_\_\_

Father's occupation: \_\_\_\_\_

## Appendix N

## Cookie Taste Rating Form

Please rate each cookie (candy) on the following dimensions on a scale of 1-10  
(1 = terrible, 5 = average, 10 = excellent)

## Cookie A

## 1. Texture

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 2. Flavour

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 3. Fragrance

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 4. Sweetness

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 5. Chewiness

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 6. Overall rating

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 7. How much do you like the cookie?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

Score (to be completed by the experimenter)\_\_\_\_\_

## Cookie B

## 1. Texture

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 2. Flavour

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 3. Fragrance

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 4. Sweetness

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 5. Chewiness

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 6. Overall rating

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 7. How much do you like the cookie?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

Score (to be completed by the experimenter)\_\_\_\_\_

## Cookie C

## 1. Texture

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 2. Flavour

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 3. Fragrance

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 4. Sweetness

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 5. Chewiness

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 6. Overall rating

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 7. How much do you like the cookie?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

Score (to be completed by the experimenter)\_\_\_\_\_



## Appendix O

### Debriefing - Study 1

There is more to this study than I have told you about so far. But before I tell you exactly what it is, I would like to explain why it is necessary for some kinds of psychological studies not to tell people all about the purpose of the study at the very beginning. In some kinds of studies, if we tell people what the purpose of the experiment is and what we predict about how they will react under particular conditions, they might deliberately do whatever they think we want them to do, just to help us out and give us the results that they think we want. If that happened, their reactions would not be a good indication of how they might react in a situation in every day life, where they did not think they were being studied. It is also possible that the opposite might occur and that people might think that if we predicted that they would do a certain thing, they might deliberately not do it to show us that we can figure them out. This would also make the results invalid, because again, what the people would be responding to is what they thought we were looking for rather than responding naturally. Can you see why in some studies we can tell people all about the purpose of the study at the beginning because it would influence the results and make the data invalid? (Pause and give the participants a chance to ask questions or comment).

Now I would like to explain exactly what we are trying to get at in this study. We told you that we were looking at the way that memories of events might affect people's taste ratings. We told you that you would be completing a taste test so you would be aware that there would be an eating component to this study. However, the study that you just participated in looked at the effect that reading a story about someone who was being teased about her weight has on the amount people eat. There is research that suggests that sometimes when people are upset by something, like teasing, they eat in order to make themselves feel better. Research also suggests that people tend to be pretty upset by being teased about their weight. So, this study was interested in looking at whether or not people are upset after reading a story about someone who is teased about their weight and if people who were upset after reading the story ate more cookies than others who were less upset by the story. Some people in this study read a story about someone who is teased about her weight and other people read a similar story that did not have anything about teasing in it. The questionnaire you answered right after reading the story was actually a part of this study. We told you that it was for another study because we thought people who read the story about teasing might think they should answer the questionnaire in a certain way because the story was kind of sad. They may have acted like they were either more or less upset by the story than they actually were. We thought that if people thought the questionnaire was for someone else's study, they might be more honest in telling us how they felt.

The other part of the study was looking to see if there are differences between the amount of cookies that people who binge eat and those who do not binge eat. When you registered for the participant pool in January, you were asked to answer a number of screening questions. Two of those questions were about binge eating. Some of the

participants in this study answered questions saying they sometimes engaged in binge eating, where they felt their eating was out of control. The other participants in the study answered that they did not binge eat.

Binge eating can be a problem for some people and it is important that psychologists have as much information about it as possible. That is why we are conducting this study. However, we were afraid that if we told you that we would be paying attention to the amount you ate after reading the story, that you might have changed the amount you would have eaten, or paid more attention to the number of cookies you ate than you normally would in everyday circumstances. I hope you can see how it was important for people in this study to think it was about something else. Do you understand why we had to do that? Do you have any questions? (Pause and allow participant to talk about this if they have any concerns for questions).

As in most psychological research, we are interested in how the average person reacts in this situation. We need to test many people and combine their results in order to get a good indication of how the average person reacts under the different conditions. In order for us to draw any conclusions, we have to combine the data we got from you with data we get from other people so that we have enough data to draw conclusions. What this means is that there will be many people participating in this study. It is going to be necessary for us to ask you not to say anything about the study to anyone else. If you talked to someone else about the study and told them all the things I just told you and then they were in the study; their reactions wouldn't be spontaneous and natural, and their results couldn't be used and combined with your data and those from other people. If that happened, we wouldn't have enough data to make conclusions about the average person, so the whole study really would be for nothing. I hope you can see why it is extremely important that I ask you not to say anything about the study. So, I would like to ask you not to say anything about the study, other than you did a taste test of some cookies and filled out some questionnaires until at least the end of the semester. Will you promise me that you will not tell others about the study until it is all over?

Your participation in research is very important. In a study like this where we didn't give you all the information up front, we want to make sure you are satisfied with your participation and that you wish to keep your data in the study. If you tell me now that you do not want your data to be used, we will remove it from our pool of data. Do you want to keep your data in the study, or have it removed? Do you have any questions about that?

We also want to let you know that we realize that some of the questionnaires we asked you to complete were personal in nature. Some of them might have made you think about past experiences you did not want to think about. Some people might be upset after completing questionnaires, others will not be upset at all. Both of these responses are perfectly normal. If you have any concerns, I really want to encourage you to discuss your reactions with me, either now or later on, we will give a way to contact both me and my research advisor. If you would prefer to discuss your reactions to the study with someone else, we will give you a list of resources on campus and off campus that you may contact.

We hope you found your experience of participating in this study interesting. I would be glad to answer any questions you might have.

## Appendix P

## Weight/Height Consent Form

## CONSENT STATEMENT

You have just participated in a research study conducted by Cheryl Aubie and Dr. Josee Jarry at the University of Windsor entitled: The Impact of Weight-Related Teasing on Binge Eating and Mood.

As a final part of the larger study you have just completed, you have been asked to allow the investigator to obtain a measure of your height and weight, so your body mass index (BMI) can be calculated.

The information you provide the investigator will remain confidential and will be disclosed only with your permission. Any information you provide will be used for research purposes only, which may eventually include publication of a research article.

Taking part in this final portion of the study is completely voluntary. If you do not wish to be weighed or have your height measured, you are free to refuse without any penalty or loss of bonus points.

If you are willing to participate in this study and understand all that will be asked of you in participating, please sign your name following this consent statement.

**I hereby acknowledge that, after reading this statement, I am willing to allow the investigator to measure my height and weight. I understand that all information I provide will be used for research purposes only and that anonymity is assured. I also realize I am free to withdraw from the study at any time without penalty.**

---

Signature of participant

---

Date

---

Signature of investigator

---

Date

This study has been reviewed and received ethics clearance through the University of Windsor Research Ethics Board. If you have questions regarding your rights as a research participant, please contact:

Research Ethics Coordinator  
University of Windsor  
Windsor, ON N9B 3P4

Telephone: (519) 253-3000 ext. 3916  
Email: [ethics@uwindsor.ca](mailto:ethics@uwindsor.ca)

## Appendix Q

### Social Interaction Vignettes - Study 2

#### Weight-Related Teasing vignette

Elaine got up Saturday morning and decided to make a trip to the mall for her mom, who needed flowers for a party she was hosting tonight.

At the flower shop, Elaine found a bouquet of flowers she thought her mom would like for the centerpiece. As she left the flower shop and headed into the rest of the mall, she saw Lisa and Melanie, two girls from school.

"Hi, Elaine," Lisa said. "Buying flowers for someone?" she said as she disgustedly motioned to the flowers in Elaine's arms.

"They're for my mom party tonight," Elaine explained.

"Sure they are. Where are you going now then? The plus-size store is in the other direction," Lisa asked, while snickering with Melanie.

"Yeah, fatty. You better watch out. If you gain any more weight you won't be able to even fit through the door of the mall next time." Melanie chimed in, laughing.

Not wanting to reply to their teasing, Elaine turned around and headed for the nearest exit, scanning to see what direction Melanie and Lisa went.

#### Neutral vignette

Elaine got up Saturday morning and decided to make a trip to the mall for her mom, who needed flowers for a party she was hosting tonight.

At the flower shop, Elaine found a bouquet of flowers she thought her mom would like for the centerpiece. As she left the flower shop and headed into the rest of the mall, she saw Lisa and Melanie, two girls from school.

"Hi, Elaine," Lisa said. "Buying flowers for someone?" she said as she motioned to the flowers in Elaine's arms.

"They're for my mom's party tonight", Elaine explained.

"That's nice. Where are you going now then? That new store is in the other direction", Lisa mentioned.

"Yeah, well see you in class on Monday," Melanie chimed in.

Thinking that she didn't need anything else from the mall today, Elaine turned and headed for the nearest exit.

#### Academic-Related Teasing Vignette

Elaine got up Saturday morning and decided to make a trip to the mall for her mom, who needed flowers for a party she was hosting tonight.

At the flower shop, Elaine found a bouquet of flowers she thought her mom would

like for the centerpiece. As she left the flower shop and headed into the rest of the mall, she saw Lisa and Melanie, two girls from school.

"Hi, Elaine," Lisa said. "Buying flowers for someone?" she said as she motioned to the flowers in Elaine's arms.

"They're for my mom's party tonight," Elaine explained.

"Sure they are. I didn't know that you were smart enough to even find the mall," Lisa asked, while snickering with Melanie.

"Yeah, dummy. You better watch out. If you do any worse on the next report card, they won't even hire you at a fast food restaurant" Melanie chimed in, laughing.

Not wanting to reply to their teasing, Elaine turned around and headed for the nearest exit, scanning to see what direction Melanie and Lisa went.

## Appendix R

## Eating Disorders Examination - Questionnaire (EDE-Q)

Instructions: The following questions are concerned with the PAST FOUR WEEKS ONLY (28 days). Please read each question carefully and circle the appropriate number using the scale below. Please answer ALL the questions.

		No Days	1-5 Days	6-12 Days	13-15 Days	16-22 Days	23-27 Days	Every Day
1	Have you been deliberate <u>trying</u> to limit the amount of food you eat to influence your shape and weight?	0	1	2	3	4	5	6
2	Have you gone for long periods of time (8 hours or more) without eating anything in order to influence your shape or weight?	0	1	2	3	4	5	6
3	Have you <u>tried</u> to avoid eating any foods which you like in order to influence your shape or weight?	0	1	2	3	4	5	6
4	Have you <u>tried</u> to follow definite rules regarding your eating in order to influence your shape or weight; for example, a calorie limit, a set amount of food, or rules about what or when you should eat?	0	1	2	3	4	5	6
5	Have you ever wanted your stomach to be empty?	0	1	2	3	4	5	6
6	Has thinking about <i>food or its caloric</i> content made it much more difficult to concentrate on thing you are interested in; for example, read, watch TV, or follow a conversation?	0	1	2	3	4	5	6
7	Have you been afraid of losing control over eating?	0	1	2	3	4	5	6
8	Have you had an episode of binge eating?	0	1	2	3	4	5	6
9	Have you eaten in secret? (Do not count binges)	0	1	2	3	4	5	6
10	Have you definitely wanted your stomach to be flat?	0	1	2	3	4	5	6
11	Has thinking about <i>shape or weight</i> made it much more difficult to concentrate on things you are interested in; for example, read, watch TV, or follow a conversation?	0	1	2	3	4	5	6
12	Have you had a definite fear that you might gain	0	1	2	3	4	5	6

weight or become fat?

13 Have you felt fat? 0 1 2 3 4 5 6

14 Have you had a strong desire to lose weight? 0 1 2 3 4 5 6

15. On what proportion of times that you have eaten have you felt guilty because of the effect on your shape or weight? (Do not count binges). Circle the number which applies.

- 0 None of the times
- 1 A few of the times
- 2 Less than half of the times
- 3 Half of the times
- 4 More than half of the times
- 5 Most of the times
- 6 Every time

16. Over the past four weeks (28 days), have there been any times when you have felt that you have eaten what other people would regard as an unusually large amount of food, given the circumstances?

**YES**

**NO**

17. How many such episodes have you had over the past four weeks? \_\_\_\_\_

18. During how many of these episodes of overeating did you have a sense of having lost control over your eating? \_\_\_\_\_

19. Have you had other episodes of eating in which you have had a sense of having lost control and eaten too much, but have not eaten an unusually large amount of food given the circumstances?

**YES**

**NO**

20. How many such episodes have you had over the past four weeks? \_\_\_\_\_

21. Over the past four weeks have you made yourself sick (vomit) as a means of controlling your shape and weight?

**YES**

**NO**

22. How many times have you done this over the past four weeks? \_\_\_\_\_

23. Have you taken laxatives as a means of controlling your shape or weight?

YES

NO

24. How many times have you done this over the past four weeks? \_\_\_\_\_

25. Have you taken diuretics (water tablets) as a means of controlling your shape or weight?

YES

NO

26. How many times have you done this over the past four weeks? \_\_\_\_\_

27. Have you exercised hard as a means of controlling your shape or weight?

YES

NO

28. How many times have you done this over the past four weeks? \_\_\_\_\_

## OVER THE PAST FOUR WEEKS (28 DAYS)

Please circle the number that best describes your behaviour.

		Not at all		Slightly		Moderately		Markedly
		0	1	2	3	4	5	6
29	Has your weight influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
30	Has your shape influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
31	How much would it upset you if you had to weigh yourself once a week for the next four weeks?	0	1	2	3	4	5	6
32	How dissatisfied have you felt about your weight?	0	1	2	3	4	5	6
33	How dissatisfied have you felt about your shape?	0	1	2	3	4	5	6
34	How concerned have you been about other people seeing you eat?	0	1	2	3	4	5	6
35	How uncomfortable have you felt seeing your body; for example, in the mirror, in shop window reflections, while undressing or taking a bath or a shower?	0	1	2	3	4	5	6
36	How uncomfortable have you felt about others seeing your body; for example in communal changing rooms, when swimming or wearing tight clothes?	0	1	2	3	4	5	6



## Appendix S

## Consent Form - Study 2

## CONSENT TO PARTICIPATE IN RESEARCH

## The Influence of Memory on Taste

You are asked to participate in a research study conducted by Cheryl Aubie and Dr. Josee Jarry from the psychology department at the University of Windsor. The results will contribute to a dissertation research project. If you have any questions about the research, please feel free to contact Dr. Josee Jarry at 253-3000, ext. 2237, or via email at [jjarry@uwindsor.ca](mailto:jjarry@uwindsor.ca).

## PURPOSE OF THE STUDY

The purpose of the study is to examine the impact of reading different types of stories on taste ratings.

## PROCEDURES

If you volunteer to participate in this study, we would ask you to do the following things: You will be randomly assigned to read one of three stories and you will be asked to complete some questions about your reactions to the story. You will also be asked to participate in a taste test of three different types of candies. In addition, you will be asked to answer several questionnaires. Some of these questionnaires will pertain directly to this present study, while some others are part of another study being conducted in this laboratory.

You will remain in this laboratory for the duration of the study. The entire study will last approximately one hour and will be completed in one session. If you would like to receive information about the results of this study, you will be given an opportunity to sign up to receive such information once the study is complete.

## POTENTIAL RISKS AND DISCOMFORTS

You will be asked a variety of questions which may be personal in nature. A risk associated with this study is the possibility that thinking about these personal issues may raise some psychological and emotional concerns for you. If during or after the study, you have concerns you wish to discuss please feel free to contact Student Counselling Centre at 253-3000, ext. 4616.

## POTENTIAL BENEFITS TO PARTICIPANTS AND/OR SOCIETY

You will not benefit from the current study other than the opportunity to learn about and contribute to psychological research. The benefit to society is increasing scientific

knowledge in the area of memory and taste experiences.

#### PAYMENT FOR PARTICIPATION

You will not receive any monetary payment for your participation. You will, however, receive two bonus marks toward a psychology course of your choice.

#### CONFIDENTIALITY

Any information you provide will be used for research purposes only, which may eventually include publication in a research article, or use of your anonymous data in subsequent studies. Your name will not appear on any of the questionnaires you will out or in any future publications, and will only be disclosed with your permission. My signature on this sheet indicates that I agree to participate in this study assessing taste ratings. Signing this form indicates that I understand the following:

1. I am a volunteer and can withdraw from the study at any time.
2. The data I provide is confidential, and will be securely stored in the Department of Psychology at the University of Windsor for up to seven years.

#### PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without any consequences of any kind. You may exercise the option of removing your data from the study. You may also refuse to answer any questions you do not want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise that warrant doing so.

#### RIGHTS OF RESEARCH PARTICIPANTS

You may withdraw your consent at any time and discontinue participating without penalty. This study has been reviewed and received ethics clearance through the University of Windsor Research Ethics Board. If you have questions regarding your rights as a research participant, contact:

Research Ethics Coordinator  
University of Windsor  
Windsor, ON N9B 3P4

Telephone: (519) 253-3000 ext. 3916  
Email: [ethics@uwindsor.ca](mailto:ethics@uwindsor.ca)

#### SIGNATURE OF RESEARCH PARTICIPANT

I understand the information provided for the study "The Influence of Memory on Taste" as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

---

Name of participant (please print)

---

Date

---

Signature of participant

**SIGNATURE OF INVESTIGATOR**

In my judgement, the participant is voluntarily and knowingly giving informed consent to participate in this research study.

---

Signature of investigator

---

Date

## Appendix T

## Letter of Information - Study 2

## Influence of Situational Experiences on Thinking

You have been asked to participate in a research study conducted by Cheryl Aubie and Dr. Josee Jarry, from the Psychology Department at the University of Windsor. The results will be contributed to a dissertation research project. If you have any questions or concerns about the research, please feel to contact Dr. Josee Jarry (253-3000, ext 2237) in the Department of Psychology. The purpose of this study is the differential impact of situations on individuals' thinking.

If you volunteer to participate in this study, we would ask you to do the following things: The researcher will ask you to spend twenty minutes reading the situation description, filling out a questionnaire concerning your thoughts and feelings about the situation that is approximately one page in length. Afterwards, you will be asked to fill out some additional questionnaires which should take approximately 15 to 20 minutes. The researcher will ask that you set aside 45 minutes for the total length of participation time. The research will take place in room 287 of Chrysler Hall South. If so desired, participants will be able to access the research findings in the Psychology Department and will be made available in June of 2004.

You will be asked a variety of questions which may be personal in nature. A risk associated with this study is the possibility that thinking about these personal issues may raise some psychological and emotional concerns for you. If during or after the study, you have concerns you wish to discuss please contact the Psychological Services Centre on Sunset at 253-3000 ext. 7012.

You will not benefit from the current study other than the opportunity to learn about and contribute to psychological research. The benefit to society is increasing scientific knowledge in the area of thinking. Finally, to thank you for your participation in this study, you may be eligible to receive two bonus points toward an undergraduate psychology course of your choice.

Any information you provide will be used for research purposes only, which may eventually include publication in a research article, or use of your anonymous data in subsequent studies. Your name will not appear on any of the questionnaires you fill out or in any future publications, and will only be disclosed with your permission.

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may exercise the option of removing your data from the study. You may also refuse to answer any questions that you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so. If at any time during the study, you have questions, please feel free to ask the examiner. Also, please do not discuss this study with anyone, as they may also be

participating in the study. If other participants have inside knowledge of this study, the integrity of the study may be compromised.

You may withdraw your consent at any time and discontinue participation without penalty. This study has been reviewed and received ethics clearance through the University of Windsor Research Ethics Board. If you have questions regarding your rights as a research subject, contact:

Research Ethics Coordinator  
University of Windsor  
Windsor, Ontario  
N9B 3P4

Telephone: 519-253-3000 ext. # 3916  
E-Mail: [ethics@uwindsor.ca](mailto:ethics@uwindsor.ca)

## Appendix U

## Instruction Script – Study 2

## Instructions for reading vignette:

The first thing you will be doing today is reading this story. While you are reading it, try to put yourself in Elaine, the main character's, situation as much as you can. Once you are finished reading this story, could you please answer these questions and place them in the envelope. Once you are finished this part of the study, I will bring in the cookies for the taste test part of the study.

## Directions for candy taste test:

There are 3 different types of candies for you to taste today. I will explain how I would like you to go about doing the taste test, and then I will leave you alone to complete your ratings. I would like you to taste the candies in order, so, taste candy A, then candy B and then candy C. Before you taste candy A, please have a drink of the water to cleanse your palate, then taste candy A. You may have as many candies from bowl A as you need to make your taste ratings. Once you have finished rating candy A, take another drink of water to cleanse your palate, then move on to candy B. Make your taste ratings for candy B, have a drink of water again and move onto candy C. It is important that once you have finished rating a candy that you not go back to it and change your ratings.

Once you are all finished making your taste ratings, you can feel free to have as many candies as you like. These are set aside for only you and there are plenty. I will be back in 10 minutes.

## Directions for questionnaire package:

For the last part of the study, I would like you to fill out this questionnaire package. Some of the questionnaires are directly related to this particular study, and some are part of a larger study going on in this lab. It will take you about 15-20 minutes to complete this part of the study and I will check to see how you are doing in about 10-15 minutes. Once you have finished all the questionnaires, you may open the door and I will come back so you can sign up where you would like your bonus points to go.

## Appendix V

## Candy Taste Rating Form

Please rate each cookie (candy) on the following dimensions on a scale of 1-10  
(1 = terrible, 5 = average, 10 = excellent)

## Candy A

## 1. Texture

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 2. Flavour

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 3. Fragrance

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 4. Sweetness

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 5. Crunchiness

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 6. Overall rating

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 7. How much do you like the candy?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

Score (to be completed by the experimenter) \_\_\_\_\_

## Candy B

## 1. Texture

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 2. Flavour

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 3. Fragrance

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 4. Sweetness

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 5. Crunchiness

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

## 6. Overall rating

1      2      3      4      5      6      7      8      9      10

7. How much do you like the candy?

1      2      3      4      5      6      7      8      9      10

Score (to be completed by the experimenter)\_\_\_\_\_

Candy C

1. Texture

1      2      3      4      5      6      7      8      9      10

2. Flavour

1      2      3      4      5      6      7      8      9      10

3. Fragrance

1      2      3      4      5      6      7      8      9      10

4. Sweetness

1      2      3      4      5      6      7      8      9      10

5. Crunchiness

1      2      3      4      5      6      7      8      9      10

6. Overall rating

1      2      3      4      5      6      7      8      9      10

7. How much do you like the candy?

1      2      3      4      5      6      7      8      9      10

Score (to be completed by the experimenter)\_\_\_\_\_



## Appendix W

## Debriefing – Study 2

There is more to this study than I have told you about so far. But before I tell you exactly what it is, I would like to explain why it is necessary for some kinds of psychological studies not to tell people all about the purpose of the study at the very beginning. In some kinds of studies, if we tell people what the purpose of the experiment is and what we predict about how they will react under particular conditions, they might deliberately do whatever they think we want them to do, just to help us out and give us the results that they think we want. If that happened, their reactions would not be a good indication of how they might react in a situation in every day life, where they did not think they were being studied. It is also possible that the opposite might occur and that people might think that if we predicted that they would do a certain thing, they might deliberately not do it to show us that we can figure them out. This would also make the results invalid, because again, what the people would be responding to is what they thought we were looking for rather than responding naturally. Can you see why in some studies we can tell people all about the purpose of the study at the beginning because it would influence the results and make the data invalid? (Pause and give the participants a chance to ask questions or comment).

Now I would like to explain exactly what we are trying to get at in this study. We told you that we were looking at the way that reading different stories might affect people's taste ratings. We told you that you would be completing a taste test so you would be aware that there would be an eating component to this study. However, the study that you just participated in looked at the effect that reading different stories about teasing has on the amount people eat. There is research that suggests that sometimes when people are upset by something, like teasing, they eat in order to make themselves feel better. Research also suggests that people tend to be pretty upset by being teased about their weight. So, this study was interested in looking at whether or not people are upset after reading a story about someone who is teased about their weight and if people who were upset after reading the story ate more cookies than others who were less upset by the story. Some people in this study read a story about someone who is teased about her weight, others read about someone who is teased about her academic performance, and others read a similar story that did not have anything about teasing in it. The questionnaire you answered right after reading the story was actually a part of this study. We told you that it was for another study because we thought people who read the story about teasing might think they should answer the questionnaire in a certain way because the story was kind of sad. They may have acted like they were either more or less upset by the story than they actually were. We thought that if people thought the questionnaire was for someone else's study, they might be more honest in telling us how they felt.

The other part of the study was looking to see if there are differences between

the amount that people who binge eat and those who do not binge eat. When you registered for the participant pool, you were asked to answer a number of screening questions. Two of those questions were about binge eating. Some of the participants in this study answered questions saying they sometimes engaged in binge eating, where they felt their eating was out of control. The other participants in the study answered that they did not binge eat.

Binge eating can be a problem for some people and it is important that psychologists have as much information about it as possible. That is why we are conducting this study. However, we were afraid that if we told you that we would be paying attention to the amount you ate after reading the story, that you might have changed the amount you would have eaten, or paid more attention to your eating than you normally would in everyday circumstances. I hope you can see how it was important for people in this study to think it was about something else. Do you understand why we had to do that? Do you have any questions? (Pause and allow participant to talk about this if they have any concerns for questions).

As in most psychological research, we are interested in how the average person reacts in this situation. We need to test many people and combine their results in order to get a good indication of how the average person reacts under the different conditions. In order for us to draw any conclusions, we have to combine the data we got from you with data we get from other people so that we have enough data to draw conclusions. What this means is that there will be many people participating in this study. It is going to be necessary for us to ask you not to say anything about the study to anyone else. If you talked to someone else about the study and told them all the things I just told you and then they were in the study; their reactions wouldn't be spontaneous and natural, and their results couldn't be used and combined with your data and those from other people. If that happened, we wouldn't have enough data to make conclusions about the average person, so the whole study really would be for nothing. I hope you can see why it is extremely important that I ask you not to say anything about the study. So, I would like to ask you not to say anything about the study, other than you did a taste test of some cookies and filled out some questionnaires until at least the end of the semester. Will you promise me that you will not tell others about the study until it is all over?

Your participation in research is very important. In a study like this where we didn't give you all the information up front, we want to make sure you are satisfied with your participation and that you wish to keep your data in the study. If you tell me now that you do not want your data to be used, we will remove it from our pool or data. Do you want to keep your data in the study, or have it removed? Do you have any questions about that?

We also want to let you know that we realize that some of the questionnaires we asked you to complete were personal in nature. Some of them might have made you think about past experiences you did not want to think about. Some people might be upset after completing questionnaires, others will not be upset at all. Both of these responses are perfectly normal. If you have any concerns, I really want to encourage

you to discuss your reactions with me, either now or later on, we will give a way to contact both me and my research advisor. If you would prefer to discuss your reactions to the study with someone else, we will give you a list of resources on campus and off campus that you may contact.

We hope you found your experience of participating in this study interesting. I would be glad to answer any questions you might have.

## Appendix X

## Post-Experimental Questions - Study 2

When you were first contacted to participate in this study, what was your understanding of the purpose of this research project?

Did you believe the "cover story" used in this study?

At any point in the study did you wonder if there was more to this study than you were initially told? If so, when?

Had you heard about this research study from other psychology students before participating in this study?

Do you agree to refrain from discussing the true purpose of this study with others?

## VITA AUCTORIS

Cheryl D. Aubie was born in 1978 in Fredericton, New Brunswick. She graduated from Bathurst High School in 1996. From there she went on to St. Thomas University where she obtained a Bachelor of Arts with First Class Honours in Psychology. She then attended the University of Windsor where she completed her Master of Arts in Psychology. She is currently a candidate for a Doctorate in Philosophy in Clinical Psychology and hopes to graduate in Fall 2006 after completing her pre-doctoral internship in clinical psychology at the Queen Elizabeth II Health Sciences Centre in Halifax, Nova Scotia.